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VOLUME XXII.

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CONTENTS OF VOLUME XXII.

JULY, 1914.

	PAGE
OUR INTEREST IN TURKEY, R. Chambers	1
SOME NON-SHAKESPEAREAN HISTORICAL PLAYS, W. F. P. Stockley	13
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis	34
THE PUZZLE OF THE CANADA CLERGY RESERVES, J. Powell Laycock	47
RUBBER, GUTTA-PERCHA AND ALLIED SUBSTANCES, John Waddell	56
EDUCATIONAL READJUSTMENT IN THE U. S., H. T. J. Coleman	66
SONNET—MECAENAS, Alexander Louis Fraser	70
LIFE OF THE SETTLER IN WESTERN CANADA BEFORE THE WAR OF 1812, Adam Shortt	71
THE RELIGION OF ISRAEL, W. G. Jordan	90
CURRENT EVENTS, H. Michell, O. D. Skelton	93

OCTOBER, 1914.

ANDREW MARVELL'S PROSE WORKS: A HISTORICAL STUDY, W. D. Taylor	113
THE PARABLES, S. H. Gray	126
THE POPPY AND THE VINE, W. L. Goodwin	135
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis.....	152
THE GRANGE IN CANADA, H. Michell	164
WHAT THE PRESENT WAR MEANS, J. Cappon	184
FOOD AND ITS ORIGIN, W. T. MacClement	198
THE EUROPEAN WAR AND THE PEACE MOVEMENT, O. D. Skelton	205
ROMAN IMPERIALISM, W. Gordon	215
CURRENT EVENTS, W. L. Grant	219

CONTENTS OF VOLUME XXII—(Continued).

JANUARY, 1915.

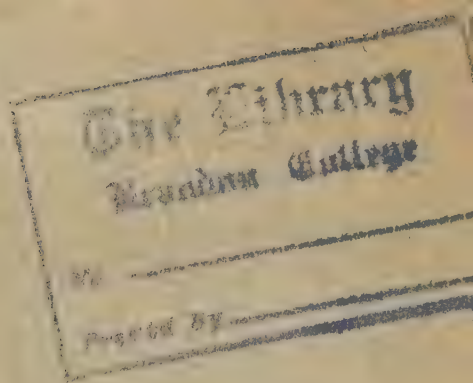
	PAGE
ARCHIBALD LAMPMAN, Bernard Muddiman	233
CANADIAN OCEAN STEAMSHIPS AND THEIR EARLY DIFFICULTIES, W. Smith	244
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis.....	254
THE PLACE OF THE CANADIAN-BORN IN THE EMPIRE, Logie Macdonnell	265
ALFALFA, THE CONQUEST OF THE AIR, C. C. James.....	280
FIFTH F. C. C. ENGINEERS AT VALCARTIER, A Graduate....	294
SONNET, Alexander Louis Fraser	298
THE ORIGIN AND HISTORY OF THE HEBREW LANGUAGE, H. T. Wallace	299
CURRENT EVENTS, James Cappon	317

APRIL, 1915.

GERMAN PHILOSOPHY AND POLITICS, John Watson	329
OUR GREATEST COMMON DIVISOR, David H. Browne.....	345
NATURAL MEASUREMENT AND INTERVALS OF TIME, N. F. Dupuis	351
MODERN BRITISH FOREIGN POLICY, J. L. Morison.....	363
QUEEN'S AND THE WAR, D. M. G.....	384
GERMANY'S CONTRIBUTION TO MODERN CULTURE, E. F. Scott	389
THE FINANCIAL POWER OF THE EMPIRE, W. W. Swanson...	400
DR. SAROLEA AND THE WAR, W. G. J.	429
AN AMERICAN VERDICT, A. S. F.	433
CURRENT EVENTS, W. G. J.; K. N. Colville.	437

LIBRARY

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OUR INTEREST IN TURKEY.—R. Chambers.

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CONTENTS

	PAGE
OUR INTEREST IN TURKEY	1
<i>R. CHAMBERS.</i>	
SOME NON-SHAKESPEAREAN HISTORICAL PLAYS	13
<i>W. F. P. STOCKLEY.</i>	
MECHANICAL MEASUREMENT OF TIME	34
<i>N. F. DUPUIS.</i>	
THE PUZZLE OF THE CANADA CLERGY RESERVES	47
<i>J. POWELL LAYCOCK.</i>	
RUBBER, GUTTA-PERCHA AND ALLIED SUB- STANCES ..	56
<i>JOHN WADDELL.</i>	
EDUCATIONAL READJUSTMENT IN THE U. S.	66
<i>H. T. J. COLEMAN.</i>	
SONNET—MECAENAS	70
<i>ALEXANDER LOUIS FRASER.</i>	
LIFE OF THE SETTLER IN WESTERN CANADA BEFORE THE WAR OF 1812	71
<i>ADAM SHORTT.</i>	
THE RELIGION OF ISRAEL	90
<i>W. G. JORDAN.</i>	
CURRENT EVENTS	93
United Kingdom: The Present Situation; The Course of Events; The Gun Running Incident; The Nationalist Volunteers; The Amended Bill; The Budget; The Situation in the Constituencies; The Murray Inquiry.	
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VOL. XXII

July, August, September, 1914

No. 1

OUR INTEREST IN TURKEY.

LET me give four out of the many reasons there are for taking an interest in the fate of the Turkish Empire.

1. The sacred associations of the lands comprising that Empire.

2. The presence within the bounds of the Empire of remnants of the Christian church of the first centuries.

3. The intellectual and spiritual crisis which is now upon the masses, including the Mohammedan populations of the land.

4. Christian duty and the benefit that comes to a man or a community from an earnest effort to comprehend any important human movement and from some sacrifice made in order to give such a movement the right direction.

I. Only to mention the fact that the Turkish Empire covers the lands where the earliest civilizations of mankind were developed; lands where Greek philosophers, poets, and artists worked out their themes; where Roman emperors and governors, wise and unwise, cruel and humane, wrought out their ideas of empire; or, later, where controversy raged around the person of Christ and the Procession of the Holy Spirit, and where the great councils of the church were held and the Christian creeds were formulated (such as the Nicene and Athanasian)—passing over all this let me only remind you that within the present Turkish Empire there is scarcely a foot of soil that has not been consecrated by the spiritual struggles of the greatest souls the human race has produced, who sought God for themselves and for the whole race of man. The faith of Abraham, the leadership of Moses, the spiritual vision of Isaiah, the tears of Rachel, the cross of Jesus, the preaching of Paul, the ashes of unnumbered mar-

tyrs—all these planted their seeds of world-transformation within the borders of what is now the Turkish Empire. Moriah, Sinai, Carmel, Bethlehem, Bethany, Golgotha, the Mount of Olives, Antioch, Troas, Macedonia, the Upper Room at Jerusalem and the jail at Philippi—what a galaxy of bright-shining stars on our spiritual horizon! Can their light ever grow dim for us? And yet every one of these sacred places has been or is under the blight of Turkish misrule, while in the borders of some of them, especially Macedonia, whose angel once stood before Paul and called him to preach in that land the Gospel of Peace, fanaticism and the sword were lately seen clasping each other and whirling in the pitiless death-dance.

Who can wonder at the fervor and the tremendous sacrifices of life on the part of the old crusaders, who wished to see that land restored to its heritage of Christian faith and ideals; and of the Balkan Alliance, brought to birth by bitter Turkish oppression and the awakening of a new national consciousness. Surely the Christian world can never cease to hope that these lands in all their borders may again resound with the clamor of a true spiritual struggle and may at last be brought into the liberty which maketh free indeed.

II The second reason I wish to urge is the presence throughout nearly all the borders of the land of remnants of the ancient Christian churches.

The Turkish tribes that entered Armenia, Asia Minor and Southern Europe embraced Mohammedanism rather than Christianity. The creed of Mohammedanism was simple—"God is God and Mohammed is His Prophet"—; its demands were explicit and easily understood—absolute, unquestioning, and irresponsible submission to what was accepted as the Divine will, and its promised rewards were attractive to barbarian instincts—plunder and satiety in all wars that were waged and a sensual heaven to all who died in the sacred wars. This spirit of plunder and of false religious ideals swept over the degenerate Christian Empire of the East, destroying the Christian civilization, utterly wiping out whole populations and driving Christian learning from the East to the West, but permitting Christian remnants to exist on sufferance among the graves of their forefathers.

Perhaps the most interesting to us of these remnants is the ancient Apostolic Church of Armenia, and for the following reasons:

First, because the Armenian was the first nation to accept Christianity. Before the decree of Constantine gave Christianity standing in the Roman Empire the Armenian king and his people had embraced the teaching of Jesus. That was in the fourth century, and from that day to this the history of Armenia presents us with one continued struggle to preserve her existence as a Christian nationality.

Second, because the earliest extensive movement against priestly aggression and against the substitution of ritual for the simplicity of faith took place within the Church of Armenia. As far back as the eighth century thousands of Armenian Protestants (using that word in its literal sense of protest against the errors of the priesthood) were martyred or banished for the simplicity of their faith. Many of these were banished to Southern Europe and there sowed the seeds which bore fruit in the teachings of reformers, whose activity preceded the Reformation of Luther—so that we owe more than we know of our Protestant inheritance to the suffering Church of Armenia.

Third, because the Armenians have been and are today the most universally, pitilessly and hopelessly oppressed of all Christians of the East. Victims of Koordish lust and greed, deceived by the Turkish government's false promises, betrayed by the jealousies of the Great Powers of Europe they die daily. They are scattered—about one million and a half of them—over the entire Empire, and form the chief Christian element not only in Armenia itself but in Ur, whence Abraham, according to the tradition, started on his spiritual journey in search of Jehovah; in Cilicia, the Apostle Paul's native country and the scene of his first apostolic activity, in "Pontus, Galatia, Cappadocia, Asia and Bithynia" to whose churches the Apostle Peter's first epistle was addressed. The Armenian remnant, pilgrims and persecuted in their own fatherland and in every province of the Turkish Empire, still holds aloft the Cross of Christ and forms the Christian hope of Asiatic Turkey.

Fourth, because though their priests are mostly ignorant; though the church services are conducted in the ancient lan-

guage, which few understand, it being to the Armenian today what the language of Caedmon and Chaucer is to us; though preaching is seldom indulged in by their clergy, the church service consisting almost exclusively of ritualistic chantings, yet the Armenian church is the most democratic of all the ritualistic churches and her people are of all the people of the East the most hospitable of evangelical truth and of modern ideals.

Fifth, because just as the Armenian nation was the first to embrace Christianity, so the Armenian church was the first to welcome and benefit by the labors of the American missionaries. Our missionary labors and successes have been chiefly among this people. They have been the greatest sufferers and the most bitterly persecuted at the hands of their oppressors, but a much larger share of the spiritual blessing of the missionary work in Turkey has fallen to them than to any other people in that land.

This Armenian remnant, stimulated by missionary encouragement, and helped by the missionary churches within its borders, is the chief element by means of which Asiatic Turkey is to be evangelized. The Armenian church has clung to the cross through centuries of oppression. We must help her to regain the simplicity of her primitive faith that she may do the work God has appointed her in those Bible Lands.

There are other Christian remnants from the early days, but the one which challenges the attention of the Christian world in connection with the Balkan war and the reorganization of the Balkan States, is the Greek Orthodox Church, sometimes called the Greek Catholic church.

In the course of the early centuries the Patriarch of Constantinople gathered to himself supreme spiritual authority in the Eastern Empire and the Greek Orthodox church, of which he is head, includes within its fold the national churches of Russia, Roumania, Bulgaria, Servia, Greece, Montenegro and the adherents of that faith throughout the Turkish Empire.

In all these countries the church is a political engine, and the Patriarch is a political bishop. The union of the Balkan states in the war against Turkey would have been quite impossible had not the ecumenical Patriarch in Constantinople succeeded in bringing about a good understanding between the

different national divisions of the Greek Orthodox church. That good understanding, however, was completely and viciously broken when, after the conquest of European Turkey, the war broke out among the Allies themselves.

The ambassadorial conference of the powers, under the presidency of Sir Edward Grey in London, adopted as their principle of action the preservation of peace among the six Great Powers of Europe, not necessarily in the Balkan States. The breaking of that peace would have brought in Armageddon, and to avoid that, sacrifices of honor and righteousness were freely made. The war between the Allies was really a struggle between Austria-Hungary and Russia, who could get at each other only through the divided Allies as their gladiators; and Russia won out in the humbling of Bulgaria.

In the resulting division of conquered territory in which the Great Powers took a hand, one principle adopted was the inclusion as far as possible, in any territory, of a homogeneous population and that meant simply a population professing subjection to the same national church. It was to the interest therefore of the contending parties for each to anticipate the decision of the Powers by clearing the ground claimed, and this was done by forcible conversions with massacres of the obdurate. The massacres of Christians by Christians, of which you read so much during the war of the Allies, and in which Bulgaria, though blamed most, was the least guilty of all, were reprisals by the adherents of one national branch against another national branch of the Greek Orthodox church, each national division hastening to establish a claim to disputed territory while the dilatory Powers were trying to reach a decision among themselves.

Fortunately that crisis is past and now again our ears are permitted to feel the caress of earnest pleadings on the part of choice souls in that proud old remnant of the Eastern Empire for a more spiritual interpretation of religion.

III. A third reason for present interest in the fate of Turkey is the fact that we have there so many millions of Mohammedans who, like the Christian remnants, are just now passing through a great intellectual and spiritual, as well as political, crisis. This crisis was definitely on when in July, 1908, a voice was lifted in Macedonia, which soon resounded

in all the limits of the Empire, crying, "Liberty, Fraternity, Equality, and a Constitution!" Instantly the old order was changed. A spirit stalked through the land lighting fires on every high hill and leading in the dance under every green tree, teaching all to shout the chorus, "We are Men, MEN, no longer slaves and despised, we are brothers and free; we will recall our banished leaders of opinion; we will build monuments to the martyrs of liberty; we will open free lecture halls, crowd our school buildings, multiply our daily papers; we will assert our freedom from ecclesiastical authority compelling our priests and imams to keep their own places; we will elect a free parliament, and henceforth our rulers shall be our servants.

The scenes which occurred in the streets of Constantinople, when the late Sultan was forced to proclaim the constitution and when the people felt themselves released from the terrible grip of the autocratic horror, are quite indescribable. All prison doors were opened; the streets of the capital were for weeks swarming with scores of thousands of men, women and children, talking, weeping, shouting, praying, falling upon each others' necks in an ecstasy of brotherly feeling and common sympathy; the mosques, churches, synagogues, were crowded with multitudes giving thanks to God; Rabbis, Patriarchs, Priests, Mohammedan religious teachers, army officers, Protestant preachers—all mingling on the same platforms—joined in the ascription, "This is none other than the Great Power of God." The Palace spies and official police utterly disappeared and the new police force was not as yet organized; and yet during those weeks of spiritual elation scarcely a shadow of criminal disorder appeared.

There were two incidents illustrative of the general spiritual elation: when all doors were open, all goods unprotected, and all faces shining with the general joy, an "Achan in the camp"—a sneak-thief—reached forth his hand to another's property. A "soldier of liberty," who saw him, shot him dead, and the people said, "Praise be to God on High!"

There was a Turkish Pasha who, under the old regime, had gained absolute power in his own sphere. No crime had been left unperpetrated by him. If you called him a beast and a fiend, you should still feel the need of adjectives to com-

plete the description of his inhuman cruelty and moral turpitude. And when the windows of heaven were opened that day that men might see the shining face of God in the awakening consciences of the people, there was no spot of purity in this man's soul, which might enable him with open face to stand before the "Seat of Judgment" then set up. He sneaked out of the city, entered a closed carriage behind swift horses, and commanded the charioteer to hasten to the open country. Some Mohammedan peasants on the road recognized the monster, dragged him from the carriage and hewed his body to pieces, saying, "This is the day of God; let no sin remain to stain His creation." It was the hand and spirit of Samuel the prophet clearing the earth for God.

Since then have followed several years of crude attempt at self-government. The great change had come too suddenly. Too small a proportion of the people had received even the most elementary instruction in the theory and practice of constitutional government. The "Young Turk" party had no truly moral basis for its theories; and so conflicting personal interests, intellectual vanities and the vain hope of being able by whatever means, to wrest the Empire from the closing grip of Europe brought on bitter dissension and threatened complete disintegration.

Stable government must have other foundation to build upon than that of emotion and intrigue. "Blessed is the people whose God is the Lord." Genuine character, inwrought with the Eternal Truth, can alone secure stability and usefulness to governments or to individuals.

And now the Moslem also of Turkey finds himself in the grip of the human movement of today, and out of the depths he calls, as he has never before humbled himself to do, for sympathy and help from the West to which God has given special blessing. He thus becomes our brother in the "tribulation and patience of Jesus Christ." He seeks our sympathy, he craves our right hand of fellowship. Nor does he come to us empty-handed. The emphasis he places upon the Divine Unity, his conception of the all pervading will and energy of God, and the simplicity of the terms in which his faith is stated not only furnish us with an interesting study in psychology, but also suggest to us the corrective for the terribly

materialistic tendencies of western thought and the ultra practical trend of western life.

Supremely interesting is the fact that members of certain mystic orders of the Mohammedan faith profess themselves as "Seekers after the truth and after "union with God," in terms which the ordinary Christian would regard as peculiar to evangelical modes of speech; and that lately several of these Moslem "seekers after the truth" have embraced the evangelical faith and have established at Potsdam, which is a great center of Prussian militarism, a Theological seminary for the study of Islam from the Christian point of view and for the preparation of a literature and of a body of teachers to carry the knowledge of Christ to their fellow country-men.

IV. We must now remember our Christian duty to meet the present opportunity in Turkey.

We Christians do not claim that only those who have known and conscientiously accepted as Lord and Master the historic Christ may enter into the Kingdom of heaven, for "Many shall come from the East and from the West, from the North and from the South, and shall sit down with Abraham and Isaac and Jacob" in that kingdom. But we do claim that in the character and teaching and sacrifice of Jesus of Nazareth the human soul finds the most perfect setting forth as well as the fullest assurance of the Divine Fatherhood, and finds there also the fundamental human qualities which make Him the soul's highest interpreter to itself and before God, which constitute His life the purest incentive and most powerful impulse in humanity toward righteous living and human advancement.

How grandly the Apostle Paul sets forth the truth that through the influence of His life and death and resurrection reconciliation shall be wrought out in all the universe; all things shall be gathered together in one, and God shall be all in all; all that there is in God for man shall become the human endowment and the earth shall be filled with the glory of the Lord as the waters cover the sea.

If, then, this is so, the principal key to world-redemption is in the hands of the followers of Jesus. The religion which has the truth that Jesus taught for its center and its life is the religion which all the nations need and which the Universal

Father has designed for all His human children. When I speak of the religion of Jesus, I do not mean simply the teaching of any of the Christian churches or any current theological or denominational setting forth of dogma, but I mean the intelligent, spiritual, brotherly life which develops through communion with the spirit of Jesus and which furnishes the impulse to work together for the common good.

The foreign missionary movement is one of the manifestations of this brotherly life. The missionary boards are the chief opportunities offered to the Christian public to identify itself in a healing, helpful and grandly successful way with this human movement towards God; and Turkey, or rather the various populations of Turkey, stricken, long suffering, oft-disappointed, smitten until "the whole head is sick and the whole heart faint," but now in their inmost soul straining to catch the note of human sympathy in the attitude of the free, progressive Christian nations of the West—these newly awakened populations of Turkey furnish as today with a field for Christian enterprise such as the Providence of God has seldom opened up before the faithful worker in a glorious cause.

The Balkan States, already formed out of the old European Turkey, with their democratic constitutions, their new aspirations, the quickened sense they received of Christian disinterestedness and of missionary efficiency and essential benevolence during the two wars—these newly organized states with more than twenty millions of people, mostly of vigorous stock, newly risen to stretch their long benumbed limbs and to fling from them the sordid fears, the cringing habits, the mental torpor, and the spiritual paralysis of past days, and to step out into the light and energy and ambitions of the modern world, largely untried, eagerly seeking counsel, and in the providence of God led to look to this continent more than to any other quarter of the globe for those elements—intellectual, moral, spiritual which give ballast to character and furnish the right material for nation-building—these eager, irrepressible, impatient millions, who are changing not only the map, but also the political ideas and ambitions of Europe, sound to us the Macedonian call in even more ringing accents than those in which it came to the Apostle Paul, "Come over and help us."

Then cast a glance at Constantinople with her million and a quarter of people, with her unique situation, her commercial possibilities, the glamor of her cosmopolitan life and the fact that she is the heart of a still great Empire now passing through the pangs of a new birth. Call to mind that we have in that city Christian colleges of European repute; schools and churches occupying points of vantage, a Bible House which, as a centre of sane and wholesome ideas, as an object lesson of financial integrity, as an almoner of the charitable gifts of Europe and America to the needy population of the Turkish Empire, has a standing which pashas and patriarchs envy and at the same time generously concede.

Remember the sixteen millions of people in the Asiatic provinces—Turks, Kurds, Arabs, Greeks, Syrians, Armenians—just now passing through the intellectual and spiritual crisis which the revolutionary movements of 1908 brought upon them, and remember that a comparatively small missionary force is solely responsible for nearly that entire population's spiritual enlightenment.

It is true we are doing a great work, that we have a printing press that sends out millions of useful pages every year, that we have about two hundred missionaries, with an average to each of eight native helpers (including school teachers, colporteurs, Bible women, preachers, pastors, etc.), that we have about 35,000 pupils in our schools, some 75,000 evangelical adherents in all the land, with 20,000 communicants; but what are these among the thirty-five millions of the Balkan states and Asiatic Turkey?

Our evangelical people are generally zealous. They contribute an average of ten dollars for every communicant throughout the length and breadth of the land. And this represents a supreme effort when you consider the precarious and poverty-stricken conditions under which the vast majority of them exist.

The equipment of the American Board of Commissioners for Foreign Missions in Turkey is such that with an advance of twenty-five per cent on the present scale of money appropriations the work could be doubled. As it is, however, for the lack of small sums here and there, we have missionaries over-worked, increasing numbers incapacitated by nervous

prostration, native helpers driven into other spheres for lack of support in this sphere, churches half-hearted or utterly discouraged where a grant-in-aid of two hundred to one thousand dollars would mean the completion of their new church and school building, would mean also bright looks, light hearts, and more hopeful activity where now the foot treads heavily and the heart is sore under the chilling conviction that the hand that might be stretched out to help one over a hard place is not so stretched forth. Where a man is carrying a burden which already tests his strength and he comes to a steep place in the road, just put your hand to his burden; it will not mean much to you, it may mean all the world to him and to you in the way of moral reward, far more than you imagine.

Mr. Ellis, in the New York "Outlook," closes an article thus, "The largest task of social service before the human race at the present hour is the amelioration of conditions throughout the whole of the vast Empire which for centuries has borne the name of the sons of Othman."

The weapons of our warfare are not carnal, but spiritual to the pulling down of strongholds and the furtherance of the cause of humanity.

The weapons we are employing today in Turkey among the Turks as well as among the old Christian remnants are:

1. Hospitals, medical missionaries, nurses, orphanages, etc.
2. Schools of all grades, attended by thousands of Christian and hundreds of Moslem pupils.
3. Bible distribution — thousands of copies being sold to Moslems and hundreds of thousands to Christians every year.
4. Y.M.C.A. workers in every missionary center.
5. Personal intercourse with individuals, e.g. with leading Moslems, who would not attend Christian service, but talk freely with Missionaries.
6. Evangelistic work, pursued largely by means of native communities of evangelical Christians.

These are the means that God blesses and this missionary work, with the hopes to which it has given birth, forms the

one bright spot in all the long sad chapter of Turkish occupation.

Through these means our confident hope is that righteousness and truth shall be established in all these Bible lands and the poet's description of the advent of peace shall be realized for the various inhabitants of that distraught empire.

 "Into a land
 "Storm-wrought, a place of quakes, all thunder-scarred,
 "Helpless, degraded, desolate,
 "Peace, the white angel, comes;
 "Her eyes are as a mother's.
 "Her good hands
 "Are comforting and helping; and her voice
 "Falls on the heart, as after winter, spring
 "Falls on the world, and there is no more pain.
 "And, in her influence, hope returns, and life,
 "And the passion of endeavor; so that, soon,
 "The idle ports are insolent with keels;
 "The stithies roar, and the mills thrum
 "With energy and achievement."

R. CHAMBERS.

Bardizag, Turkey.

SOME NON-SHAKESPEAREAN HISTORICAL PLAYS.

COLERIDGE in his Notes on Shakespeare's Historical Plays writes with enthusiasm of what a great national drama may be to a people. We all know what the Greek drama did to give expression and life to a local or national faith and patriotism. In Ireland, indeed, in Moore's words: "It is true this island has given birth to heroes who, under more favourable circumstances, might have left in the hearts of their countrymen recollections as dear as those of a Bruce or a Wallace; but success was wanting to consecrate resistance: their cause was branded with the disheartening name of treason, and their oppressed country was a blank among nations." If this was not always true of an Owen Roe O'Neill, it was finally true; and Brian's victory over foreigners had consolidated no action.

In Coleridge's words: "In order that a drama may be properly historical, it is necessary that it should be the history of the people to whom it is addressed." "It would be a fine national custom to act such a series of dramatic histories in orderly succession, in the yearly Christmas holidays, and could not but tend to counteract that mock cosmopolitanism"—he is writing in his late protesting, against the French Revolution levelling—"which under a positive term really implies nothing but a negation of, or indifference to, the particular love of our country. By its nationality must every nation retain its independence; I mean a nationality, *quoad* the nation. . . Patriotism is equal to the sense of individuality reflected from every other individual. There may come a higher virtue in both—just cosmopolitanism. But this latter is not possible but by antecedence of the former."

Coleridge notes how Shakespeare's plays cover nine reigns. He thinks of the other eleven, before Henry VIII—"after which the events are too well and distinctly known, to be without plump inversimilitude, crowded together in one night's exhibition." Of these eleven he thinks William I and William II the only unpromising subject: "all the rest are glorious subjects; especially Henry II (being the struggle be-

tween the men of arms and of letters, in the persons of Henry and Becket), Stephen, Richard I, Edward II and Henry VII."

To refer backwards. As to HENRY VII Coleridge says "Perkin Warbeck would make a most interesting drama." Of course there exists Lord's play, besides an older chronicle play on the same subject. And also, Green's *James IV of Scotland*. Thomas Heywood has a chronicle play on EDWARD IV. For EDWARD III there is the anonymous play, which some—by Capell, in 1760—have ascribed to Shakespeare; but without external evidence. It is not a dramatic unity: it begins with a love-tale, and ends with Cressy, Poitiers, Calais. EDWARD II, Marlowe's play. EDWARD I, Peele's. For a little of HENRY III, Greene's *Friar Bacon and Friar Bungay*. HENRY II suggested the modern play, Tennyson's *Becket*. And Keats began *King Stephen*. As, at the other end of the list, there is Tennyson's *Queen Mary*, and Sir Aubrey de Vere's *Mary Tudor*. But with these we have not to do. Coleridge, it may be said, himself "planned an historical drama of King Stephen, in the manner of Shakespeare."

However, dealing with what we have, and omitting earlier or worse chronicle plays, such as *The Troublesome Reign of King John*, and *The Famous Victories of Henry V*, there remains, of Shakespeare and his contemporaries:—

King John II, 1199-1216—Shakespeare.

Henry III, 1216-1272—In Green's *Friar Bacon*, etc.

Edward I, 1272-1307—Peele.

Edward II, 1307-1327—Marlowe.

Edward III, 1327-1377—?

Richard II, 1377-1399—Shakespeare.

Henry IV, 1399-1413—Shakespeare.

Henry V, 1413-1422—Shakespeare.

Henry VI, 1422-1461—Shakespeare.

Edward IV, 1461-1483—Thomas Heywood.

Richard III, 1483-1485—Shakespeare.

Henry VII, 1485-1509—Ford's *Perkin Warbeck*.

“ “ —In Green's *James IV*.

Henry VIII, 1509-1547—Shakespeare and (?) Fletcher.

Mary and Elizabeth, 1553—Heywood's *If you know not me you know Nobody* (Two Parts).

Coleridge has looked on the historical drama as the link between the epic where fate predominates over will, and the

dramatic where will struggles against fate. The fixed events of the historic drama are a kind of fate.

Not that a dramatist is a mere historiographer. Shakespeare is sometimes more so, sometimes less. Spenser in the Letter to Sir Walter Raleigh, to the *Faerie Queen* has marked the distinction:—

“For the methods of a Poet historicall is not such as of an Historiographer. For an Historiographer discourseth of affaires orderly as they were done, accounting as well the times as the actions; but a Poet thrusteth into the midst, even where it most concerneth him, and there recouring to the things forepast, and divining of things to come, maketh a pleasing analysis of all.”

It is in the English historical plays that Shakespeare, recounting a series of events, is less of the poet historical and more of the historiographer than he is in *Julius Caesar*; to take an instance in special contrast, in which one side of that wonderful man's character is presented in order that Caesar's grandiloquent vanity may be a foil to Brutus' justified idealized avenging. In these English historical plays of Shakespeare's the unities are specially disregarded.

We are not directly touching Shakespeare's historical plays here but rather those others that led up to his plays, specially Peele's *Edward I* and Marlowe's *Edward II*. The dates may be noted:

- c. 1590, Edward I.
- c. 1591, Edward II.
- 1592, Henry VI.
- 1593, Richard III.
- 1593, Richard II.

Later came Shakespeare's unparalleled *Henry IV* and *Henry V*, history and comedy in the scene of life.

Then there is the *Edward III* of about this last date; published in 1596. And, after Shakespeare, there is, as the most notable, *Perkin Warbeck*; written perhaps about 1635, when the short-lived English historical drama was almost at an end; the subject, therefore, apologized for, in the prologue, as a thing already out of fashion. Ford lived till after the outbreak of the Puritan Civil War.

To Edward the First as King, in Peele we have an introduction behind the historical scene when as Prince Edward in Greene's *Friar Bacon and Friar Bungay* (before 1590) he had wanted to marry Margaret, the fair maid of Fresingfield, fair Peggy, who wanted Lacy Earl of Lincoln for her lord.

"Edward, art thou that famous Prince of Wales,
Who at Damasco beat the Saracens,
And brought'st home triumph on thy lance's point?
And shall thy plumes be pull'd by Venus down?
Is't princely to dissever lovers' leagues?
Leave, Ned,* and make a virtue of this fault,
And further Peg and Lacy in their loves:
So in subduing fancy's passion,
Conquering thyself, thou get'st the richest spoil.
Lacy, rise up. Fair Peggy, here's my hand:
The Prince of Wales hath conquer'd all his thoughts,
And all his loves he yields unto the earl."

At which, Margaret, well content

"Yields thanks, and next Lord Lacy, doth enshrine
Edward the second secret in her heart."

One tires of the often tuneless verse, each line as if one pulled a special string to let each off to its inevitable stop. Nor in the few lines without stops is there much sense of continuity; though, indeed, it promises as well, and better, than some of Marlowe's, as we shall see here. How admirable, by contrast, is the variety and continuous movement of Pope, within limits not only of stopped lines, but of couplets:

"All are but parts of one stupendous whole,
Whose body nature is, and God the soul;
That, chang'd thro' all, and yet in all the same,
Great in the earth, as in th' ethereal frame,
Warms in the sun, refreshes in the breeze,
Glows in the stars, and blossoms in the trees."

That is the verse people who cannot read it call monotonous. But to go back to Shakespeare, successor of Peele, and to open him, also, at random, in his early stopped verse:

*Speaking to himself, in the silly sounding fashion of these primitive days.

"Now, madam, summon up your dearest spirit:
Consider who the King your father sends,
To whom he sends,, and what's his embassy."

At least it is a guitar; if not a violin. Peele's "And shall thy plumes be pull'd by Venus down" is no more than a song.

That mention of Edward the First's wife makes us note the extraordinary caricature, the great blot in Peele's play, representing Elinor as an insolent fool, and murderess. This, as is supposed, to please anti-Spanish feeling in England. It may be compared with the presentation in Henry VI of Joan of Arc as a sort of malignant witch. Surely very unlike the urbane humanity of Shakespeare. However, that by the way. Edward is giving "a college for my married men"; others are endowing; the Queen Mother giving "five thousand pounds of gold"; and the King: "Nell! what wilt thou that I set down for thee?" "Elinor"—of herself—"bethink thee of a gift worthy the King of England's wife and the King of Spain's daughter, and give such a largess that the chronicles of this land may crake with the record of thy liberality"—*makes a cipher*. Finally, for her first death: "O Joan, help, Joan. Thy mother sinks!" [*The earth opens and swallows her up*]. Yet "She was a right godly, and modest princesse ful of pitie, and one that shewed much favour to the English nation; ready to relieve every man's grieve that susteyned wrong, and to make them friends that were at discorde, so far as in her lay." In this tale, she returns to die once more with tainted name.

Edward I at the outset celebrates in fitting proud tones of patriotic fire the return of the warlike king from the Crusades. If the verse is still often that passing and repassing of the shuttle, with a final blow or click—distressing as a jogging black speck tormenting a reader's eye—there is much sound of a more flexible medium; the last six lines are in the traces but, as it were, bounding to be free:

"Illustrious England, ancient seat of kings,
Whose chivalry hath royaliz'd thy fame,
That sounding bravely through terrestrial vale,
Proclaiming conquests, spoils, and victories,
Rings glorious echoes through the farthest world;
What warlike nation train'd in feats of arms,
What barbarous people, stubborn, or untam'd,
What climate under the meridian signs,

Or frozen zone under his brumal stage,
 Erst have not quaked and trembled at the name
 Of Britain and her mighty conquerors?"

But contrast kings and conquests in *Richard II*, iii, 2:—

"I weep for joy
 To stand upon my kingdom once again.
 Dear earth, I do salute thee with my hand,
 Though rebels wound thee with their horses' hoofs:
 As a long-parted mother with her child
 Plays fondly with her tears and smiles in meeting,
 So, weeping, smiling, greet I thee, my earth,
 And do thee favours with my royal hands."

And in *Henry V*, iv, 8, 85:—

"This note doth tell me of ten thousand French
 That in the field lie slain: of princes, in this number,
 And nobles bearing banners there lie dead
 One hundred twenty-six: added to these,
 Of knights, esquires, and gallant gentlemen,
 Eight thousand and four hundred; of the which,
 Five hundred were but yesterday dubb'd knights."

What a contrast to that return of Edward I is the opening of Marlowe's chronicle of his weak successor, returning with a triumphing conqueror, but calling back a base favorite to share his ignoble ease and folly.

Thus *Edward II* opens:

Enter GAVESTON reading a letter.

"My father is deceas'd. Come, Gaveston,
 And share the kingdom with thy dearest friend.'
 Ah, words that make me surfeit with delight!
 What greater bliss can hap to Gaveston
 Than live and be the favourite of a King!
 Sweet prince, I come! these, these thy amorous lines
 Might have enforc'd me to have swum from France
 And, like Leander, gasp'd upon the sand,
 So thou wouldst smile, and take me in thine arms.
 The sights of London to my exil'd eyes
 Is as Elysium to a new-come soul:
 Not that I love the city or the men,
 But that it harbours him I hold so dear,—
 The King, upon whose bosom let me lie,
 And with the world be still at enmity."

But to return to *Edward I.*

Those words on his country were characteristic, as we all know, of the Elizabethan national spirit, the age of rising national strength, of separated life consequent on the religious break-up of Europe, of an increased self-confidence, patriotism. It presents one view of a nation, which, its Byron said,

‘has butcher’d half the world and bullied t’other.’

Peele wrote again:

“To arms, to arms, to glorious arms!
With noble Norris, and victorious Drake,
Under the Sanguine cross brave England’s badge
To propagate religious piety,
And hew a passage with your conquering swords
By land and sea.
Even to the gulf that leads to lofty Rome;
There to deface the pride of Antichrist,
And pull his paper walls and popery down. . . .
You fight for Christ and England’s peerless Queen
Elizabeth, the wonder of the world, . . .
O ten-times treble happy men that fight
Under the cross of Christ, and England’s Queen,
And follow such as Drake and Norris are!”

He was echoed in the great passage in *Richard II*, which is so glorious a type of patriotism. One contrasts the Peele in its Marlowe-like sentiments, with the tender grief and wounded pride, and the feeling as of a lover or a child, and instead of aggressive anti-popery the reverent religion of:

“This blessed plot, this earth, this realm, this England,
This nurse, this teeming womb of royal kings,
Fear’d by their breed and famous by their birth,
Renowned for their deeds as far from home,
For Christian service and true chivalry,
As is the sepulchre in stubborn Jewry
Of the world’s ransom, blessed Mary’s Son.
This land of such dear souls, this dear, dear land,
Dear for her reputation through the world,
Is now leased out, I die pronouncing it,
Like to a tenement or pelting farm
This England, that was wont to conquer others,
Hath made a shameful conquest of itself.”

Edward’s ideal for a federation of England, Scotland, Wales, under England, is accepted by his candidate for the

Scottish crown. It was under his successor that Bruce was to win Bannockburn. But Balliol now says:

“Victorious Edward, to whom the Scottish kings
Owe homage as their lord and sovereign,
Amongst us nine is but one lawful king . . .
To stay these jars we jointly make appeal
To thy imperial throne, who knows our claims.
We stand not on our titles 'fore your grace,
But do submit ourselves to your award;
And whom your majesty shall name our king,
To him we'll yield obedience as a king.
Thus willingly, and of her own accord,
Doth Scotland make great England's king her judge.”

The Welsh rebel, and Edward rants:—

“Ambitious rebel! know'st thou who I am?
How great, how famous and how fortunate?
.
Traitor, this sword unsheath'd hath shinèd oft
With reeking in the blood of Saracens;
My horse's hoofs I stain'd in Pagan gore,
Sending whole countries [? centurīes] of heathen souls
To Pluto's home. This sword, this thirsty sword,
Aims at thy head, and shall, I hope, ere long
Gage and divide thy bowels and thy bulk,
Disloyal villain thou.”

Contrast, again, Shakespeare's Henry V, and the anger against a traitor's sin, and breaking human bonds—ii, 2, 137:—

“O, how hast thou with jealousy infected
The sweetness of affiance! Show men dutiful?
Why, so didst thou: seem they grave and learned?
. seem they religious?
Who, so didst thou: or are they spare in diet,
Free from gross passion or of mirth, or anger,
Constant in spirit
Such and so finely bolted didst thou seem:
And thus thy fall hath left a kind of blot ,
To mark the full-fraught man and best indued
With some suspicion. I will weep for thee;
For this revolt of thine, methinks, is like
Another fall of man.”

But then the Welshmen yield and vow allegiance:—

“for our country Cambria's common good,
T'avoid the 'fusion of our guilty blood

For our country chief these boons we beg . . .
 That none be Cambria's prince to govern us
 But he that is a Welchman."

This Elinor will mar all in Wales:—

"I tell thee, the ground is all too base
 For Elinor to honour with her steps . . .
 This climate o'er lowering with black congealed clouds,
 That take their swelling from the marish soil,
 Fraught with infectious fogs and misty damps,
 Is far unworthy to be once embalm'd
 With redolence of this refreshing breath."

She boxes her husband, "mighty England," when he would kiss her. The queen's friar chum is as a friar in Marlowe, if not more so—as unlike Shakespeare's Friar Lawrence as Ford's Bonaventura—when "enter Friar Hugh ap David, Guenthian his wench, in flannel, and Jack his novice. "My masters and friends, I am a poor friar, a man of God's making, and a good fellow as you are; legs, feet, face and hands, and heart, from top to toe of my word right shape and christendom; and I love a wench as a wench should be loved, and if you love yourselves, walk good friends, I pray you, and let the friar alone with his flesh." They go singing, and banging at one another, Elinor in the midst. Later comes the confession that I, Queen Elinor, have to make,

"My body weak, inclining to the grave"—

to holy Friars, the disguised husband and his brother. By the way:

"On your troths, you holy men of France:
 Then as you love your life and England's weal
 Keep secret my confession from the king;
 For why, my story nearly toucheth him,"

of her first treachery with his brother.

"Unto this sin a worser doth succeed;
 For, Joan of Acon, the supposed child
 And daughter of my lord the English king,
 Is basely born, begotten of a friar,
 Such time as I was there arriv'd in France.
 His only true and lawful son, my friends,
 He is my hope, his son that should succeed,
 Is Edward of Carnarvon, lately born."

Careless, and extravagant, one is ready to say of much of this violent ending, where everything is turned topsy-turvy, and the distracted characters rush about and complain and bewail; and no wonder. Only it is gross and unreal, unprepared for, and characters seem saying their say like prophets.

Indeed the tragic ending of *Edward II* is far otherwise. And Lamb has reason to say—absolutely, if not so relatively—

“The death-scene of Marlowe’s king moves pity and terror beyond any scene ancient or modern with which I am acquainted.”

“The reluctant pangs of abdicating royalty in Edward furnished hints which Shakespeare scarce improved in his Richard the Second.”

“This tragedy is in a very different style from “mighty Tamburlaine.”

Stubbs in the *Const. Hist. Eng.*, ii, 339, writes of Marlowe’s ‘hero’ that Edward II “is not without some share of the chivalrous qualities that are impersonated in his son. He has the instinctive courage of his house, although he is neither an accomplished knight nor a great commander. But he has no high aims, no policy beyond the cunning of unscrupulous selfishness. He has no kingly pride or sense of duty, no industry or shame or piety. He is the first king since the Conquest who was not a man of business, well acquainted with the routine of government; he makes amusement the employment of life; his tastes at the best are those of the athlete and the artisan. . . .”

Gaveston had been brought up as foster-brother and play-fellow of Edward II. “Brave and accomplished, but foolishly greedy, ambitious and ostentatious, and devoid of prudence and foresight.”

And further, contrasting Marlowe’s murdered king with Shakespeare’s:—

“*Edward II* has no kingly aspirations; *Richard* had a very lofty idea of his dignity, a very distinct theory of the powers, of the functions, and of the duties of royalty. It is true that they were both stay-at-home kings in an age which would tolerate royal authority only in the person of a warrior. . . .

The legislation again of the reign of Richard is marked by real policy and intelligible purpose: Edward II can scarcely be said to have legislated at all." (p. 555).

Edward II's agents in the House of Commons were: Sir J. Bushy, Speaker; Sir H. Green, and Sir W. Bagot.

The charges against Edward II were that he

1. Was incompetent.
2. Rejected good counsel.
3. Lost Scotland, Ireland, Gascony.
4. Imprisoned churchmen; imprisoned and killed nobles.
5. Broke coronation oath by not doing justice.
6. Was ruining the realm; he himself being incorrigible.

He was deposed Jan. 20, 1327; and survived eight months till September 21.

It is impossible not to think of the story of Richard II with that of Edward II. And Shakespeare had Marlowe's play in his mind.

At the outset let us say that Isabella is not the "she wolf of France," but is the wife, at first faithful, though disgusted and insulted by her husband's mean crime and folly. Even when Gaveston is recalled, her patience still bears it.

We saw how the play opens, with Edward's plan to use his kingship for folly with his favourite. He is silly throughout. With Richard, too, it was "Youth on the prow, and Pleasure at the helm." But Richard is shown to us with something really kingly; and, at least, "yet looks he like a king." It is his arbitrariness, his injustice that we see; and his inner weakness indeed, and shy fear, and cunning.

"Lions make leopards tame," he says grandly to the proud lords. But these will not obey their king of no royal nature, who then retires, with a certain dignity, saying, "we were not born to sue but to command," yet with the intent to plot the ruin, by exile, of these lords, one of whom, his usurper to be, he has such cause to fear. "How high a pitch his resolution soars"—he almost involuntarily, as it seems, exclaims. From the beginning the shadow of the usurper Henry IV falls on Richard, chills him; he shrinks within, and hates, and plots, with the merciless policy of fear. Yet the stronger, the silent rival gains day by day on the ever talking Richard. It is a great conception of Shakespeare's, and sketched with such art

in the opening scene. To this Coleridge has so well called attention—when men were less sure to the art here shown.

Marlowe's Edward II seems rather to scold; like a spoiled boy:

"I will have Gaveston; and you shall know
What danger 'tis to stand against your king."

And when the lords are gone:

"I cannot brook these haughty menaces;
Am I a king, and must be overruled?
.
.
.
I'll bandy with the barons and the earls,
And either die or live with Gaveston."

The same external violence; when a bishop remonstrates:

"Throw off his golden mitre, rend his stole,
And in the channel [kennel of the street] christen him anew.
.
.
.
. . . Spare his life, but seize upon his goods:
Be thou [Gaveston] lord bishop and receive his rents,
And make him serve thee as thy chaplain:
I give him thee here, use him as thou wilt."

It does indeed seem that a Shakespeare play differs in kind from such a display as that of pirate or mob-leader controversy. When Richard II seizes "high Hereford's" goods, it is part of a policy, a stroke at one who is a rival in the people's hearts, and a means of coffer-filling called for, as he dares maintain, by his Irish wars.

In the despicable fashion of these cruder plays, Gaveston had metaphorically patted him, with his aside: "Well done, Ned."

Think, if in *Richard II*, i, 1, Bolingbroke, with however fierce a tone, had talked of his cousin Dick. This disgusting tastelessness would have let Horatio make asides about the doings of *Ham*, or perhaps let the fool josh about *Lear-y*. It is too vile. One grudges Banquo's "Dear Duff" in *Macbeth*; though it really does sound, there, like simple and heart-feeling speaker. One feels, not less, Shakespeare's fit word in Falstaff's "Hal."

The poor King Edward II is a sort of infatuated creature. Act II begins:—

King Edward—The wind is good, I wonder why he stays;
I fear me he is wreck'd upon the sea.

Queen Isabella—Look, Lancaster, how passionate he is,
And still his mind runs on his minion!

Lancaster—My lord,—

King Edward—How now! what news? is Gaveston arrived?

Young Mortimer—Nothing but Gaveston! what means your grace?
You have matters of more weight to think upon;
The King of France sets foot in Normandy.

King Edward—A trifle! we'll expel him when we please."

It is more Orgon's "Et Tartuffe?" than the word of a sane king to be endured.

When Gaveston comes in again, it is almost with a whimpering tenderness that Edward greets

"My Gaveston!

Welcome to Tynemouth! welcome to thy friend!
Thy absence made me droop and pine away;
For, as the lovers of fair Danae,
When she was locked up in a brazen tower,
Desired her more, and waxed outrageous,
So did it fare with me :and now thy sight
Is sweeter far than was thy parting hence
Bitter and irksome to my sobbing heart."

But here, anyway, we are far indeed from the verse of *Edward I*—I turn back, at random, to

"Revive thee, hapless lady: grieve not thus.
In vain speak I, for she revives no more.
Poor hapless soul, thy own repeated moans
Hath wrought her sudden and untimely death."

But Richard's favourites, Bushy, Bagot, Green, are "caterpillars of the Commonwealth"; they are not fondled, mandolin-like, as Gaveston is.

It is crude, too, this rant of Edward when down.

Edward (*kneeling*): "By earth, the common mother of us all,
By Heaven, and all the moving orbs thereof,
By this right hand, and by my father's sword,
And all the honours 'longing to my crown,
I will have heads, and lives for him, as many
As I have manors, castles, towns, and towers!
(*Rises*) Treacherous Warwick! traitorous Mortimer!
If I be England's king, in lakes of gore
Your headless trunks, your bodies will I trail,
That you may drink your fill, and quaff in blood,
And stain my royal standard with the same."

Though that follows the living yet steady lines:—

“My lord, refer your vengeance to the sword
Upon these barons; hearten up your men;
Let them not unrevenged murder your friends!
Advance your standard, Edward, in the field,
And march to fire them from their starting holes.”

In contrast to Edward's words, one cannot but recall Act III, sc. 2, of *Richard II*—Richard's glorious confidence, yet a mirage; he is, he says, the sun rising in his strength, and he is the deputy elected by the Lord. But men desert, and this emotional talker is down in the sweet way of despair; and then up, and again down once more:

“I had forgot myself: am I not king?
Awake thou coward majesty! thou sleepest.
Is not the king's name twenty thousand names?
Arm, arm, my name!”

Yet the puny subject, as he calls Bolingbroke, strikes, wounds, cuts off Richard's supporters. And thus, it is a real study of the men who with all their show and talk and ever giving of their heart away are but as fish played on the hook of the man whose hand is skilled and firm. Richard cannot be real. If he could be silent an instant. But it is so deep a study of a man: how it grows on one, how much it means:—

“For God's sake, let us sit upon the ground
And tell sad stories of the death of kings.
. . . . for within the hollow crown
That rounds the mortal temples of a king
Keeps Death his court and there the antic sits,
Scoffing his state and grinning at his pomp,
Allowing him a breath, a little scene,
To monarchize, be fear'd and kill with looks.” . . .

The wise Bishop of Carlisle's advice is welcome bread to all this intolerable deal of sack:

“My lord, wise men ne'er sit and wail their woes,
But presently prevent the ways to wail.”

The scene, too, of Richard's deposition, when the silent angler Bolingbroke draws him in slowly, surely; the King knows he is beaten, yet is maddened for that he feels an ideal of majesty, and nevertheless men mind him no more. At last

in his outburst of his very heart and life against Northumberland,

“Fiend! thou torment’st me e’er I come to hell.”

Edward the Second had also made his speech of protest to Leicester—and in wooden enough verse too.

“Ah, Leicester, weigh how hardly I can brook
To lose my crown and kingdom without cause;
To give ambitious Mortimer my right,
That like a mountain overwhelms my bliss,
In which extreme my mind here murder’d is.
But what the Heavens appoint I must obey.
Here, take my crown; the life of Edward too;
Two kings in England cannot reign at once—
But stay awhile, let me be king till night,
That I may gaze upon this glittering crown;
So shall my eyes receive their last content,
My head the latest honour due to it,
And jointly both yield up their wishèd right.
Continue ever, thou celestial sun;
Let never silent night possess this clime;
Stand still, you watches of the element;
All times and seasons, rest you at a stay,
That Edward may be still fair England’s king.
But day’s bright beam doth vanish fast away,
And needs I must resign my wishèd crown.
Inhuman creatures! nursed with tigers’ milk!
Why gape you for your sovereign’s overthrow?
My diadem, I mean, and guiltless life.”

Little there of a “mighty line.” For an instant only, the humdrum of a practiser gives a sign of being a musician:

“Stand back, you watches of the element;
All times and seasons, rest you at a stay.”

Then back to the strumming.

Richard’s kingliness comes out after all his self-musings in prison. They allude to Bolingbroke as king, and as giving orders concerning Richard :

“The devil take *Henry of Lancaster* and thee!
Patience is stale and I am weary of it.”

He seizes an axe, kills two assailants and is struck down. “As full of valour as of royal blood”—his murderer reflects. To the end he has been full of a sort of futile energy.

The weak Edward II is in his filthy dungeon; and his last agony is long and pitifully drawn out—a sight most pitiful in the meanest wretch, past speaking of in a king:—

“This dungeon where they keep me is a sink
Wherein the filth of all the castle falls. . .
And there in mire and puddle have I stood
This ten days' space; and lest that I should sleep,
One plays continually upon a drum.
They give me bread and water, being a king;
So that, for want of sleep and sustenance,
My mind's distempered and my body's numbed,
And whether I have limbs or no, I know not.
O, would my blood drop out from every vein,
As doth this water from my tatter'd robes!
Tell Isabel the queen, I look'd not thus,
When for her sake I ran at tilt in France,
And there unhors'd the duke of Cleremont.”

What a skilled musician is already playing there. Those who speak of Marlowe's lines grace him the more if they speak with understanding of his better and worse. Here the hand is indeed the hand which wrote:

“Think'st thou that I who saw the face of God,
And tasted the eternal joys of Heaven,
Am not tormented with ten thousand hells
In being depriv'd of everlasting bliss?”

But not shown in clumsy monotony stuck full of consonants, no breathing space allowed; like

“Nay, all of them conspire to cross me thus;
But if I live, I'll tread upon their heads
That think with high looks thus to tread me down.
Come, Edmund, let's away and levy men,
'Tis war that must abate these barons' pride.”

Then the murder.

Lightborn (the murderer).—O, speak no more, my lord! **this**
breaks my heart,,
Lie on this bed, and rest yourself awhile.
Edward—These looks of thine can harbour naught but death,
I see my tragedy written in thy brows.”

He dares to close his eyelids.

“Now as I speak they fall, and yet with fear
Open again. O, *wherefore sitt'st thou here?*

Light.—If you mistrust me, I'll be gone, my lord.

Edw.—No, no,—for if thou mean'st to murder me,

Thou will't return again; and therefore stay."

It is a poor caged thing, doomed, and to the butcher's knife. Lightborne thinks he sleeps. But again he starts up with

"O let me not die; yet stay, O, stay awhile.

Light.—How now, my lord?

Edw.—Something still buzzes in my ears,

And tells me if I sleep I never wake;

This fear is that which makes me tremble thus,

And therefore tell me, wherefore art thou come?"

It is the murderer's patience is done. And he seizes him:

"To rid thee of thy life."

And he shouts to the others:

"Matrevis, come!"

The victim can only moan:

"I am too weak and feeble to resist!"

and pray:

"Assist me, sweet God, and receive my soul!"

Lamb ends there his quotations of this pity and terror. But there is something more dreadful. Lightbourne calls "Run for the table"—with which they were to trample the life out. And even then, as if a poor dumb brute could appeal, waiting during the butchering:

"Oh, spare me, or dispatch me in a trice."

The savage directs how they shall stamp on the table on the body "but not too hard lest that you bruise" it.

"Tell me, sirs, was it not bravely done?"

And the other:

"Excellent, well: take this for thy reward."

And so Lightborne gets a death stab. Which is one comfort.

The notable historical play, of the generation after Shakespeare, in the last days of what we call the 'Elizabethan' period, but really well on in the reign of Charles I—Ford's *Perkin Warbeck*, has this contrast to the historical plays of

Peele, Marlowe and Shakespeare, that the subject up to its climax is greatly a story of true love and the measureless devotion of a woman's heart, in the hero's noble Scottish wife, Lady Katharine Gordon, whom her kinsman James IV gave to the reputed Duke of York, while Scotland was at enmity with Henry VII. Later, this Scottish king made peace with Henry, and took his daughter Margaret to wife, grandmother of Mary Stuart, and ancestress therefore of the kings that be. But James IV long supported Perkin Warbeck, as being Richard, the younger of the little princes murdered in the Tower—

“The most arch act of piteous massacre
That ever yet this land was guilty of.”

The pretender nourished “the flying opinion, that Richard Duke of York, second son to Edward the Fourth, was not murdered in the Tower, as was given out, but saved alive. For that those who were employed in that barbarous fact, having destroyed the elder brother, were stricken with remorse and compassion towards the younger, and set him privily at liberty to seek his fortune.” Bacon adds further, in the *History of Henry the Seventh*, that the impersonation “himself with long and continual counterfeiting, and with oft telling a lie, was turned by habit almost into the thing he seemed to be; and from a liar to a believer.” As in Scotland, so he was accepted in Ireland, “being the soil where these mushrooms and upstart weeds, that spring up in a night, did chiefly prosper.” He landed at Cork, and “the judicious Mayor of Cork” lost his head, his son likewise lost his for upholding him whom Bacon closes with as “this little cockatrice of a King,” at the end of all, on the scaffold of Tyburn. And “it was ordained,” says Bacon, “that this winding-ivy of a Plantagenet should kill the true tree itself”—

“Inveighing to thy party with thy witchcraft
Young Edward, Earl of Warwick, son to Clarence,
Whose head must pay the price of that attempt.”

So, in Ford's high serious verse. This Edward Plantagenet,

“Poor gentleman, unhappy in his fate,”

imprisoned for being his father's son, made this last and fatal plan, with Perkin Warbeck, for freedom from his life-long

But the sad story of even a pretender amidst these princes riding to fall, or to pride of place, is told in Ford's poetry, without violence, with no ranting, without base flattery, without vulgar mocking, and with no mere sentimentality, though it has its high romance.

“Oh, my loved lord! can any scorn be yours
In which I have no interest.—Some kind hand
Lend me assistance, that I may partake
The infliction of this penance.—My life’s dearest,
Forgive me; I have stayed too long; . . .
. . . yet bid me welcome.

“You abuse us:
For when the holy churchman joined our hands,
Our vows were real then; the ceremony
Was not in apparition, but in act.—
Be what these people term thee, I am certain
Thou art my husband, no divorce in Heaven
Has been sued-out between us; 'tis injustice
For any earthly power to divide us:
Or we will live or let us die together.
There is a cruel mercy.

Which last line is indeed not in form of a Shakespeare climax of speaking heart and soul. And it is not, in spirit, the utter naturalness of Brutus'

"O ye gods,
Render me worthy of this noble wife."

It is not Othello's

"And when I love thee not, chaos is come again."

No. Ford has not the depth of Shakespeare, nor his height. He has not Marlowe's wonder outbursts. He does not sing. But he constructs well and nobly; and is in art as far beyond Marlowe's rants as he is beyond Marlowe's and Peele's even stalking lines on stilts. He has true mastery in continuous unstopped blank verse. To say, with Hadow's *Oxford Treasury of English Literature* that in Ford "the desire of beauty no longer animates the play as a whole, but is concentrated on single passages or episodes; the workmanship is unequal and often careless" may have much truth; but is surely beside the mark, when said to show that Ford is thus a sign of a period's end, while the earlier authors showed nothing of these weaknesses. That is, surely, forcing, to match a theory. It is possible any one can say that the Elizabethan plays as a whole show anything of an artistic perfection in matter or in form. That is just what they do not show. Charles Lamb himself would not say they showed it.

Again, to take the romance of *Perkin Warbeck* as a sign of a later romantic tendency is, as was said above, not unfair, if contrasted with earlier historical plays; Richard III is not touched to finer issues by wooing; perhaps not even is Henry V. And further, what a theme for a 'romantic' is Hamlet and Ophelia; but not the Hamlet we know. When the Oxford Press commentator, however, adds that he means that the romance element makes the interest in Ford's *Perkin Warbeck* personal rather than political, and that that is a sign of a later 'Elizabethan' of the decline, one must protest against the assumption of the interest in e.g. *Richard III* being not personal, rather than political. Richard, as all we know of him tells, was, in Bacon's words "a Prince in military virtue approved, jealous of the honour of the English nation, and likewise a good law-maker, for the ease and solace of the common people." What is there in Shakespeare's play to lead one for a moment to any consideration of the administration of justice under the jolly thriving wooer too childish, foolish for this world who

did not die a good old man? Henry V in the night, thawing cold fear among nobles and soldiers, is Prince Hal still in bohemian ways—with a difference, now weighing time even to the utmost grain; but no believer in himself and his cause. Who would judge him by discussing the rights and the wrongs of England's claim in France? How much knowledge of mediæval politics is of the first interest when watching Youth on the prow and Pleasure at the helm, when Richard II looked like a king? But it is needless to pour out all the proof that Ford's *Perkin Warbeck* is in this sort of 'romanticism' but following *Edward I* and *Edward II* and their successors.

The close is on the level of the piece, and of Ford. It is not Tamburlaine killing of Death. It is not "to die, to sleep"; nor "if it be not now, yet it will come; readiness is all"; nor, "we are such stuff as dreams are made on." But arguing, with some force:—

"Death? pish! 'tis but a sound; a name of air;
A minute's storm or not so much. To tumble
From bed to bed, be massacred alive
By some physicians, for a month or two,
In hope of freedom from a fever's torments,
Might stagger manhood. Here the pain is past
Ere sensibly 'tis felt.

Be men of spirit!
Spurn coward passion! so, illustrious mention
Shall blaze our names, and style us kings o'er Death."

"Away, impostor beyond precedent!"

University College, Cork.

W. F. P. STOCKLEY.

MECHANICAL MEASUREMENT OF TIME CLOCK ESCAPEMENTS.

The recoil and the dead beat.

Any invention that would properly be called **great** is seldom or never the direct outcome of what may be characterized as a happy moment of inspiration, although some of the fundamental ideas entering into the invention may be such as to be so characterized.

Usually, however, an invention is the outcome of some accidental discovery, or it is devised to satisfy a distinct and well-felt need. And in many cases long and profound thought, directed along logical lines and accompanied by trial and experiment, is required to bring the first crude and imperfect attempt into a convenient and workable form.

It is true that the fundamental idea cannot be changed to any extent, as that might change completely the character of the invention, but this idea may be added to and modified in ways which do not radically change it, so as to render the invention more useful and more practical.

The whole history of invention shows this, so that there can be no dearth of illustration. Printing, for example, began with the hand-cutting of the letters and other symbols required upon wooden blocks—placing these blocks in orderly position upon the platen of a hand-worked press of crude construction—placing the paper upon the inked and upturned engraved letter, and subjecting the whole to very strong pressure—the fundamental idea being that ink placed upon the blocks could, by pressure, be transferred to the overlying paper.

In its most modern development the fundamental idea remains quite unchanged, while the details of the operation are most profoundly modified. In the Linotype the wooden blocks and the separate letters are replaced by whole lines of type cast in matrices, which are brought into the required position by the slightest touch of the finger upon the proper key, and which are made fresh and new for every separate occasion. And the old wooden press, with its limited capacity of 8 or 10 impressions per minute, and worked by hand-lever or screw, has given place to the wonderfully complex and efficient rolling press which prints and folds whole newspapers at the rate of

many hundreds per minute. But in all this progress the fundamental idea is unchanged.

In photography we have even a more noted illustration as to how a simple invention founded upon a happy discovery has been transformed and modified and added to from time to time to such an extent as almost to obscure the original invention, and become the most beautiful art process in the world. And yet through all its transformations and variations, from the original Daguerrotype down to the most modern processes of picture production and color-photography, runs like a silver thread the fundamental and original discovery that certain chemical salts are responsive to the action of light.

Many other illustrations nearly, if not fully, as forcible, might be added, some of which, if they were not in such common use, would seem to border on the miraculous, such as the telegraph and the telephone, singing and talking machines, and a few other equally wonderful inventions and contrivances.

And the clock, although probably not comparable to these in the world-wide changes wrought in the affairs of social and business life, has a longer history than any one of them. And its gradual rise from the crude form given to it by DeWyck and his contemporaries, to the almost perfect one that it possesses to-day, has not been without a profound influence upon the character of modern civilization.

The only improvements that have been made upon the pendulum and the balance are pretty much for the purpose of compensation, and these were largely perfected before any very important ones were applied to the escapement.

And although it goes without saying that no clock or watch can keep good time without a perfect governor, yet even with this aid it is equally true that the time-keeping qualities are also dependent upon the character of the escapement.

As partially explained already, the escapement should be such as to impart motion to the governor in the most uniform and equable manner possible, and with the minimum amount of disturbance. That is to say that the consecutive impulses given to the governor should be constant in force and should act through the same angle at each repetition, while at the same time the pendulum or the balance, in its movements, should be as free from all contact with the escapement as is practicable under the conditions of action.

The escapement which best satisfies these requirements is, generally speaking, the best escapement; but it will be understood that the escapement which is best under some circumstances may not necessarily be the best under all circumstances.

We now propose to consider in some detail the way in which these conditions are dealt with by the various escapements which have been, or are now, in common use.

Naturally, some escapements have been invented which possess no special features of excellence, or which have not come into practical use, or which are merely minor variations upon some well-known escapement. These are not distinctively considered in the following classification:

CLASSIFICATION OF ESCAPEMENTS

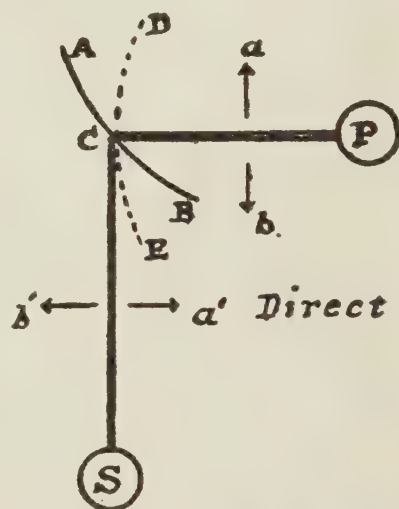
Pendulum as governor:

1. Recoil.
2. Dead beat.
 - a. Graham's.
 - b. Pin wheel.
3. Gravity.
4. Detached.

Balance as governor:

1. Crown wheel.
2. Cylinder.
3. Duplex.
4. Lever.
5. Chronometer.

Impulse and Recoil. In the diagrammatic illustration, CP is an arm which turns on a centre or pivot at P, and which in practise oscillates back and forth through a small angle in the plane of the paper; and SC is a second arm which turns about the centre S, and when in complete action is intended to rotate about S by interrupted movements, in the direction denoted by the arrow a' .



First, suppose that PC carries the circular arc DCE, having P as centre, and with which C, the end of the arm SC, is kept in contact and upon which it slides.

Then if the arm PC oscillates through a small angle in the directions given by the arrows a and b , the arm SC will remain at rest. And force applied to turn the arm SC about the centre S in the direction of arrow a' , or the forward direction, will

have no active effect upon the arm PC, in the way of causing it to turn about P.

Now let the circular arc DCE be shifted through half a right angle, say, so as to come into the position ACB.

Then it is obvious that, as C always lies on the arc ACB, if the arm PC turns about P in direction of arrow *a*, the arm SC will turn about S in the forward direction, or that of arrow *a'*. And similarly when PC rotates in the direction of arrow *b*, SC will rotate backwards, or in the direction of arrow *b'*.

Moreover, if a force be applied to rotate SC in the direction of arrow *a'*, or forwards, this force will tend to rotate PC in the direction of arrow *a*, by causing C to slide along the arc AB.

Now SC represents an arm and tooth of the scape wheel which, under the action of the clock-train, tends to rotate in the forward direction, or that of arrow *a'*; and the arm PC with the arc ACB represents a pallet which is in some way attached to the pendulum and oscillates with it. Under the disposition of matters as in the figure the action of the train tends to turn SC in the direction of arrow *a'*, and thus to turn PC in the direction of arrow *a*, and hence to move the pendulum in one direction. This force acting to move the pendulum is the *impulse*. And the counter action, by which the return motion of the pendulum forces PC in the direction of *b* and consequently SC backwards in the direction given by arrow *b'*, and thus drives the train backwards, is the *recoil*. Any escapement that has a recoil in its mode of action is a *recoil escapement*.

A recoil escapement is found in the most of domestic clocks where accuracy of time-keeping is not considered to be as important as cheapness. But it is a fact that a fairly good non-recoil escapement may be constructed at a cost but little, if any, in advance of that paid for the common recoil one.

For convenience we may measure the impulse transmitted to the pendulum by the motive power minus the friction of the moving parts of the train; then as the recoil, while it acts, drives the train backwards, it may be measured by the motive power plus the friction of the moving parts of the train. So that the power overcome in the recoil exceeds that of the impulse by twice the amount of the friction.

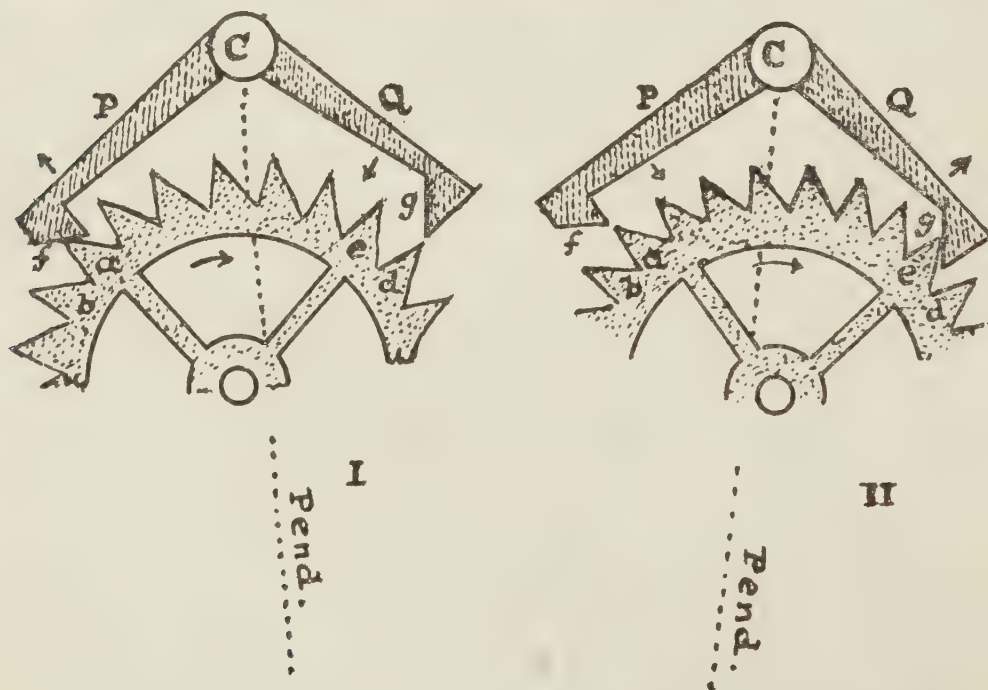
As a consequence, if the friction becomes great, as in the case of stiffened oil or a dirty train, the action of the clock becomes too largely dependent upon the disturbing effect of the recoil, and the recoil becomes a sort of uncontrollable evil.

If the arc ACB, which represents an acting face of a pallet, were part of a circle with P as centre, as is the case with DCE, there would be no recoil. But such a disposition of parts is impracticable, as under it we would have no impulse, and consequently no transmission of power from the train to the pendulum.

One of the problems in regard to the improvement of the escapement has been as to how to get rid of the recoil while preserving the impulse. How this has been solved will be explained later.

Because recoil escapements are in common use, as well as from a historical point of view, it is necessary that we give a sufficiently comprehensive description of this escapement and of its manner of action. The accompanying figures will serve to illustrate the subject.

The Anchor Escapement. The piece PQ turning on the centre C is the pallet-piece or *verge*, of which P and Q are the arms and *f* and *g* the acting faces. Whatever may be the



material of which the arms are made the acting faces should be of hard material, such as tempered steel, or glass, or some

hard gem such as ruby. And this statement applies to the acting faces of all kinds of pallets as well as to those of this escapement.

The scape-wheel turns in the direction of the arrow about the centre O, being impelled in this direction by the train. The dotted line represents the direction of the pendulum to which the pallet piece is so attached that the two oscillate together. Fig I shows the disposition of the parts when the pendulum is at the extreme right of its swing, and Fig. II when at the extreme left.

In Fig. I the tooth *a*, sliding on the face *f* pushes P outwards and consequently Q inwards, and moves the pendulum from right to left, as indicated by the arrows.

As the motion proceeds, the tooth *a* slides off, or escapes, from the pallet-face—hence the name escapement—and the tooth *e* falls upon *g*, the face of pallet Q, as illustrated in Fig. II.

Now as the pendulum does not come to rest at once, being a body of some weight, the pallet Q acting on the tooth *e* produces some recoil, or backward motion in the scape wheel, and hence in the train. Again, tooth *e* acting on *g* pushes Q outwards and P inwards, and the pendulum from left to right, until *e* escapes from *g*, and tooth *b* falls upon *f*, giving a recoil and then an impulse.

And thus the action is repeated at each pallet face alternately, the scape wheel moving over a space of one half a tooth at each swing of the pendulum. So that with a scape wheel of 30 teeth and a seconds pendulum, the scape-wheel will revolve once per minute, and a hand or pointer attached to the axis of this wheel becomes the seconds-hand of a clock.

The name *anchor escapement* is given to this on account of the fanciful similarity of the ends of the pallets to the flukes or barbs of an anchor. The faces of the pallets should be cylindrical surfaces having a radius of curvature equal to the length of the pallet, but on account of their small dimensions they are more usually made perfectly flat.

The swing of the pendulum should be about 2° on each side of the vertical, or for a seconds pendulum 1.4 inches from the position of equilibrium for the centre of oscillation, and for the purpose of overcoming, as far as possible, the effects of

the recoil the pendulum bob should be distinctly heavy, weighing not less than from 4 or 5 to 10 or 12 pounds.

In the common American house clock we usually find, on the other hand, that the swing of the usual half or two-thirds seconds pendulum may be fully 8° or 10° on each side of the vertical, and that the bob is ridiculously light, weighing only a few ounces. Of course such a clock cannot be expected to keep accurate time, and if it is fairly correct from day to day for a considerable period, it is due to a sort of accidental and mutual neutralization of errors rather than to anything else.

If the driving weight is increased, other things being the same, the impulse is increased, and the pendulum tends to increase the amplitude of its swing, and thus to make the clock lose time. But, on the other hand, the resistance and friction of the recoil is also increased, which acts to check the free swing of the pendulum. So that upon the whole the pendulum swings more rapidly under an increase of driving power, and the clock gains. It is for this reason that a clock of this kind driven by a spring always gains when wound up and loses when nearly run down.

A recoil escapement in a clock is easily detected if the clock carries a seconds hand. For this hand will be seen to move by a sort of jump to a seconds mark, and then move backwards a little; then to move forwards to the next seconds mark, and then to move back a little, and so on. If the seconds hand were seen to move forwards to a seconds mark, and then remain there still, or *dead*, until it passed on to another seconds mark, the escapement would be a non-recoil or *dead-beat* escapement. And these we now proceed to consider.

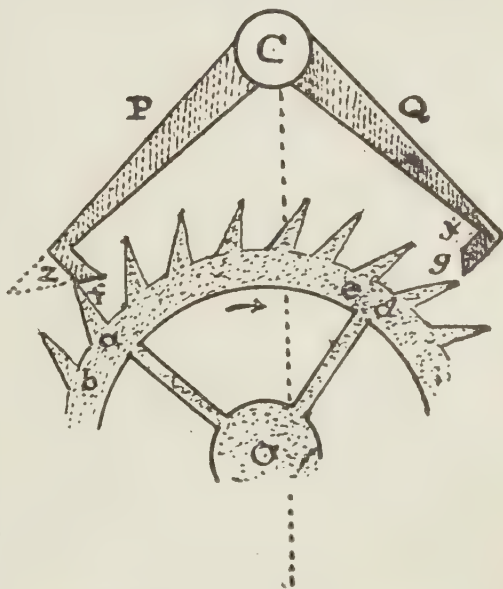
In the figure on page . . . , let the arc AC, a part of the arc AB, take the position DC, while the part CB remains unchanged. Then motion of the arm PC in the direction of arrow *b* will not produce recoil in SC, while any motion of PC in direction of arrow *a* will enable SC to impart an impulse to PC, by sliding along the arc CB. Here then is the solution of the problem how to retain the impulse while doing away with the recoil. And when we consider the simplicity of the solution, we may well be pardoned if we express our astonishment that it was not discovered long years before it was.

But, in this as in many other cases, it is comparatively easy to follow where another one leads. The evils of the recoil

were not apparent until after the pendulum was so improved as to be fairly isochronous. And if the train is of a sufficiently high quality to enable the escapement to be so adjusted as to reduce the recoil to a minimum, its evils would practically disappear. So that efforts were made to improve the train by more accurate wheel-cutting, by which the teeth were brought into true mathematical form, and by increasing the numbers of teeth in the pinion. This improvement in the character of the train, although due to no new principle but merely to more accurate workmanship with superior tools, must be nevertheless ranked as one of the improvements in the modern clock.

Graham's dead-beat escapement. This name is given to a particular modification of the anchor escapement, and was invented by Graham about 1700 A.D. It is illustrated by the accompanying figure. This shows the pallets of the anchor escapement, with parts cut away, as shown at *z* and *y*, as marked by dotted lines.

The faces at *z* and *y* are circular arcs with *c* as centre. And when the tooth *d* escapes from the pallet *g* the point of tooth *a* falls on the face *z* a little above the angle. As the momentum of the pendulum carries it somewhat further in its swing before turning to go back, the point of *a* slides, with some friction, on the dead face *z* of the pallet, but experiences no recoil. On the return of the pendulum, the point of *a* passes the angle between *z* and *f*, and sliding along *f* gives the impulse as in the anchor escapement. When *a* escapes from *f*, the tooth *d* falls upon *y* just above the angular edge, and the whole action is thus repeated alternately at each pallet.



Imperfections. The dead-beat escapement is a great improvement on the recoil escapement in the matter of time keeping, being less liable to vary under variations of force transmitted by the train. But it is not perfect, and probably no escapement can be perfect in action in which the pendulum

is in constant connection with the pallets, and through them with the scape wheel.

The friction on the dead part of the pallets tends to slow the motion of the pendulum, but not as much as the recoil does. And when the force of the impulse is increased, by an increase in the driving power, the increase in the friction on the dead face of the pallet is not sufficient to prevent the pendulum from increasing its arc. As a consequence an increase in the driving weight tends to make a dead-beat escapement lose time, although only slightly so.

Now we have seen that an increase in the driving weight makes a recoil escapement gain time. And the question arises as to whether some combination of the two escapements might not be possible in which the errors of the recoil escapement might be made to correct those of the dead-beat. As a consequence a pallet, as in the figure, has been tried and found to be more effective than either the recoil or the dead-beat.

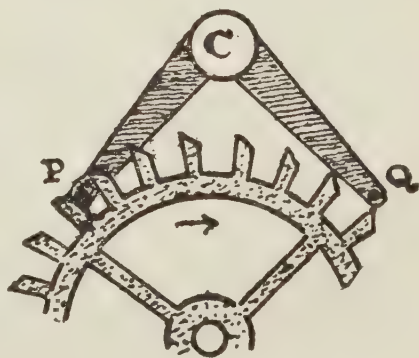


f is the impulse face, and d would be the perfectly dead face. But the acting face f' is so formed as to give a slight recoil, and this recoil if properly quantitized is found sufficient to counteract the losing tendency of the dead-beat face d , and to materially improve the time-keeping qualities of the clock, especially between certain limits. Such an escapement is called *half-dead*.

Several modifications of Graham's escapement have come into use, two of which we may briefly consider.

In some French mantle clocks, and in a few other cases, we may find escapements in which the dead and impulse faces of the pallet are transferred to the teeth of the scape wheel, and the acting parts of the pallet are reduced to steel or ruby pins.

The diagram fully illustrates this. In Graham's escapement the dead face of the pallet is a part of a cylindrical surface having the pallet axis, C , as its centre, and in the one here illustrated the dead face of the tooth should be, when resting against a pin as shown on the left, a part of



a circle or cylinder having C as centre. But this requires that C and O must be relatively so situated that a line from C to the point of contact of the pin P shall be at right angles to the face of the tooth at P, or at right angles to the line PO if the face of the tooth is radial.

No such nice adjustment as this is required in the Graham escapement, which is accordingly a simpler and superior escapement to the one here figured.

Pin wheel escapement. In this escapement the teeth of the scape wheel consist of pins driven into its face, and the pallets are brought close together.

The accompanying illustration will help to explain its operation.

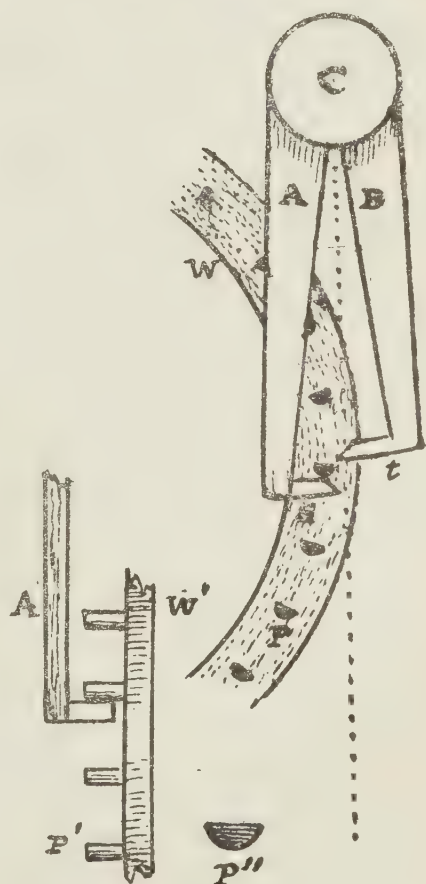
A part of the face of the scape wheel is seen at W, and edgewise at W'. The pins p and p' have a section of semicircular form, as shown at p'' , and stand out from the face of the wheel as shown at p' . The pallets are A and B, with the acting parts at s and t .

The pallet arm A stands forwards, or in front, so as to enable the wheel to pass behind it, and the part s extends backwards to catch the pins in passing. The action is readily understood.

This form of dead beat, which may also be made half-dead if required, has several advantages over the form proposed by Graham, or the Graham escapement.

In the first place, it is simpler in operation and requires less accuracy of construction.

In the Graham escapement the pallets must reach over and include not less than seven teeth, in order that the pendulum may not have too great a swing, so that the angular dis-



tance between any tooth and the seventh tooth from it must be accurately the same for every space of seven teeth, if the escapement is to work smoothly. This requires the greatest attainable accuracy in the spacing of the teeth, that is, in the wheel cutting.

In the pin-wheel, on the other hand, a little inaccuracy in the spacing of the pins is not of material importance. For as the action on both pallets is confined for the time being to one, or at most two, adjacent pins, a somewhat increased space affects only the amount of drop from one pin to the next, a matter which has no sensible influence upon the proper action of the escapement.

In the second place, if a tooth gets broken by the stopping of the train when a heavy pendulum is swinging, or by some other accident, the whole wheel in a Graham escapement is practically destroyed. Whereas if a pin gets ruined by a similar accident, it is an easy and inexpensive matter to replace it by a new pin, as the pins are either driven or screwed into the face of the wheel.

And lastly, the impulses in the Graham escapement are alternately one upwards and the other downwards, and when the impulses are strong, as they are in tower clocks, the upward impulse may be sufficient to lift the pallet axis in its bearing, thus producing a slight clicking sound at each upward impulse. Nothing of this kind is possible, as both impulses are downward, in the pin wheel escapement.

For these reasons the pin wheel escapement is, or rather has been, a favorite for church and turret clocks, where, on account of the dial and hands being exposed to the weather, accidents are much more common than in domestic clocks.

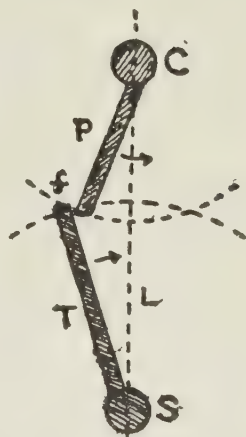
In all the escapements thus far considered it will be noticed that the impulse is given by the driving tooth or pin of the scape wheel sliding along and escaping from the impulse face of the pallet.

This sliding involves friction and consequent wear, and requires the use of oil to overcome these as far as possible. In some of the modern escapements efforts have been made to reduce this friction and wear to a minimum, or even to practically abolish it.

The line of centres.

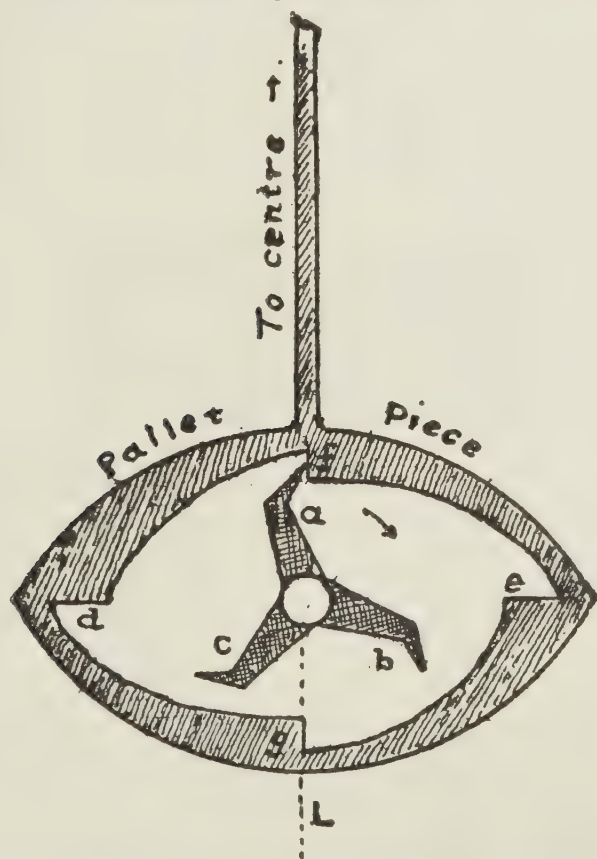
Let T and P be two pieces turning on the centre S and C respectively, whereof T is the driver and P the follower, or part driven—motion being in the direction of the arrows.

The line joining S and C is called the line of centres. Starting from the disposition of the parts as given in the figure, it is evident that when motion takes place the extremity of T must slide on P at f , the sliding motion growing less as f approaches the line of centres L. And when f arrives at this line the impulse becomes, for a moment, a direct push, without sliding action and without friction.



If it be possible then to so arrange an escapement that the whole impulse takes place at or near the line of centres the friction may be reduced to a negligible amount.

This is carried out very well in the escapement here illustrated, which was invented by the late Sir Edmund Beckett,



probably the best authority of his time, on clocks and watches.

The pallet piece is a sort of oval closed ring, as represented, this being the lower part, the centre upon which it oscillates being in the direction C as shown in the side illustration. The scape wheel has only three teeth, and in shape is something like the three united legs which form a prominent part of the Manx coat-of-arms.

The action is as follows:—The tooth *a* is pushing against the impulse face *f*, of the pallet, the action being just on the line of centres. As the pallet piece swings to the right the tooth *a* escapes from *f* and the tooth *c* falls upon the dead face *d* very near the angle. When the pendulum completes the amplitude of its swing, and is on its way back, the tooth *c* escapes from the dead face *d*, and the tooth *b* falls on the impulse face *g*, thus pushing the pallet piece, and with it the pendulum, from right to left across the line of centres, until *b* escapes from *g* and *a* falls on the dead face *e*. And thus the action is carried on, the impulse being given in both cases across the line of centres and at no time very distant from this line.

And thus the friction and the wear upon the impulse pallets and the teeth are reduced to almost nothing, except for the run on the dead faces, which need not be much.

The faces *d* and *e* may be made *half-dead* as in any other form or modification of the Graham escapement. And the only objection that can reasonably be urged against this escapement is that on account of the small number of teeth in the scape wheel an additional wheel is required in the train. This, of course, introduces additional friction into the train, but it does much less harm there than in the escapement.

N. F. DUPUIS.

THE PUZZLE OF THE CANADA CLERGY RESERVES.

NO Sherlock Holmes had a mystery to solve more intricate than the Canada Clergy Reserves. The modern detective is on the field at once, scans the conditions of the case, interviews witnesses, and on firm ground takes up the trail from the beginning. The countless legislators, lawyers, and laymen, seeking to unravel the riddle of the reservation for "a Protestant Clergy," could base their theories only on quivering quagmire: the old generation and environment were forgotten; the existing British Parliament knew not that of 1791; the reports of the debates of that year in *The Parliamentary History of England* and *The Annual Parliamentary Register*, varying from almost verbatim records to the scantiest summaries according to the whim of the reporter, furnished a nest for the propagation of error and the piling of confusion upon confusion; the inspection of the correspondence of the Lords and Commoners of that day was futile because of the notorious lack of interest in the colonies after the American Revolution; and the utter failure of the reserves to provide for a clergy in a country where land was dirt cheap left the puzzle a dead issue during the very time its originators could have given the answer.

Who were the protestant clergy referred to by the imperial cabinet in 1791? For decades the highest legal authorities of Great Britain disagreed. To this day historians differ. Curiously enough, in the wastes of the silent years is to be unearthed the solution.

The imperial statutes of 1774 and 1791 state the riddle. One authorized the Crown to apply protestant tithes to encourage "a Protestant Clergy"; the other appropriated "the rents, emoluments, and profits" from one seventh¹ of crown

¹The words of the Act, "such lands shall be . . . equal in value to the seventh part of the lands so granted" (i.e. of the Crown Lands granted to private persons), would strictly mean not one-seventh but one-eighth of the total grant. But from the first the loose construction of the words as meaning one-seventh of the total grant was usual.

grants made and to be made for the maintenance of "a Protestant Clergy", and empowered the provincial executives to endow in each township one or more Anglican rectories with part of the reserves in that locality.

The term "a Protestant Clergy" was not defined. Was it the entire protestant clergy or only that recognized by British law in 1774 and 1791? In certain sections of the second statute the phrase uniformly used is "a Protestant Clergy"; in others "the Church of England." Did the reference to the latter define what was meant by the first? Or was it mentioned merely as part of the former? Was there to be in the Canadas a single, a dual, or no ecclesiastical establishment?

The recorded debates of 1774 were never resorted to. A distinction is there drawn between religious toleration and religious establishment: one the common right of all; the other the favor for the few. Lord North could espouse the principle that British law permitted in the colonies a full and free exercise of their religion by sects other than "the Church of England"; and still sanction state aid to the latter alone. Ex-Solicitor General Dunning could declare that religious toleration should extend "to all who stand in need of it in all parts of the globe"; and yet pronounce it impolitic to establish in Quebec, an English colony, a religion not "the Protestant religion", not "the religion of England." "There is but one healing, Catholic principle of toleration. . . It is wanted not only in our colonies, but here. The thirsty earth of our own country is gasping and gaping, and crying out for that healing shower from heaven. . . We ought to suffer all classes, without distinction, to enjoy equally the right of worshipping God, according to the light He has been pleased to give to them," that eminent orator Mr. Edmund Burke could thunder, only to add his limitation, "The word established has been made use of: it is not only a crime, but something unnatural, to establish a religion the tenets of which you do not believe." Solicitor General Wedderburn could sanction Catholic tithes in Quebec and nevertheless advise its withdrawal when expediency might recommend. In the inconsistent judgment of that day it was wrong to compel an individual against his conscience to worship according to a certain creed, and yet right to force him against the same conscience to support the propagation of the

same creed. Only the liberal minded Charles James Fox could protest against the establishment of any religion contrary to the will of the majority. A Utopian would hardly expect such a parliament to provide tithes for every protestant preacher. Expediency alone could have dictated such a course, and the expediency did not exist.

Throughout the debate "Protestant Clergy," "Protestant Religion," "religion of England," and "Church of England" were considered by the same speakers to identify the same thing. The denominations named were Rome and England in antagonism to one another; others in the colony were not supposed seemingly to exist. When Ex-Solicitor General Dunning protested that the bill made no provision for "the Protestant Religion," Attorney-General Thurlow at once considered the Church of England to be meant. The next article," he said, "is with regard to religion. To take away religion is what no one wishes. What is to be substituted in place of it? Why, a general toleration, says my learned friend, without any kind of an establishment; or if an establishment, that of the Church of England; or that the Church of England should go *pari passu* with the Church of Rome."

Therefore when Lord North moved the amendment to the bill, providing for "the Protestant Religion" and "a Protestant Clergy," he must have meant the Church of England alone. Mr. Burke's proposed amendment to place tithes under the control of the Society for the Propagation of the Gospel, not opposed as unfairly excluding protestant sects, indicates support for Episcopalianism solely. "When we tell the Roman Catholics that we shall not oppress them," said the Solicitor General," we, at the same time, tell the followers of the Church of England, that whenever their faith shall prevail, it will have a right to its establishment." "The religion to be established," again asserted Mr. Burke, "should be that approved religion which we call the religion of England." The controversy following the act as to whether the Church of Rome or of England was established would never have assumed that form if the word protestant had been used in its widest sense. At this time, then, both to government and opposition the "Protestant Clergy" were the ministers of the religion recognized by the laws of England, and none other.

Does it follow then that parliament referred to the same clergy in 1791 as in 1774? Do the facts that the Canada Bill was a revision of the Quebec Act, that its reserve sections were a substitute for the tithes clause; that the only Canadian precedent of land set apart by government for a clergy not Catholic were the glebes for the Church of England; that Lord Sydney in 1785 asserted for the information of the Propagation Society that these glebes and the parliamentary grant to Canadian Episcopalians were the steps taken since the peace "towards establishing the Church of England in North America"; that the efforts of the Reverend Charles Inglis to secure "due provision for the National Church in the new Constitution" led to his appointment in 1787 to the first colonial bishopric in the empire; that this bishop according to the testimony of his son responded to the request of Lord Grenville to advise an adequate and permanent support for the Church in Quebec, by suggesting "timely grants of land"; that the belief was gaining ground that America had been irretrievably lost through the sacrifice of English and Roman hierarchies on the shrine of democratic sectarianism; do these facts substantiate Episcopalian pretensions? Or did the schism oversea provide the cure as well as the false philosophy? A new factor had come into existence since 1774: the migration of the United Empire Loyalists with the result that kirkmen and dissenters were definitely referred to in the debates on the Constitutional Act. Was the political god expediency to intervene for other protestants as previously for the Catholics?

A "decision" was made: such is suggested by the assertion ascribed to Lord Grenville, emphasized by the despatch of Mr. Henry Dundas that "in framing the Canada Act" the reservation was increased to provide a possible provision for provincial Presbyterians, and rendered certain by the internal evidence of the debate itself. On April 8th, 1791, Mr. Pitt ignored the implied request of Mr. Fox for the definition of "a Protestant Clergy." What was to be gained by explaining "the meaning of this act" on a later date? What was he to win by Fabian delay, if, unswervingly, he sought to assist one church no matter what occurred? Why was he a prey to vacillation, if, persistently, he aimed to aid protestant preachers

indiscriminately when this interpretation was opposed still less? At the surprising and slashing onslaught of Charles James Fox, had the ministry faltered in an original purpose to support solely the Church of England, the protestant clergy legally? Was the enemy's thunder their thunder, or was it to be stolen? Was it on this occasion that the two fathers of the statute came to a new "decision"? The premier must have known the governmental intention; the delay must have signified perception of an obstacle unforeseen and a desire to reconsult his cabinet.

Mr. Fox was the sole critic of the government. One authority declared that on the 8th of April he defined protestant clergy as "all descriptions of Protestants"; therefore the conclusion that all churches not Catholic were to have the reserves. One summary of his address on the 12th of May asserted "that he thought the Roman Catholic ought to be the established church of the colony, or the Presbyterian, that of the Kirk of Scotland."

The definition of protestant clergy as that ministering to "all descriptions of Protestants" does not reveal the intention of 1791, for, if so, why did the speaker admit that he was in the dark and assail the policy also from the view that the Episcopal clergy of England was meant? It indicates rather that the ministry previously had defined neither the term in particular nor the proposal in general; that a prominent opponent disclosed the clash existing between existing legal and national usage, casting his vote in favor of the last. How can a mere inquiry by a member of the opposition be construed into an authoritative declaration of government?

Two reporters on the second occasion piled confusion upon confusion by summarizing in one record the speeches of Mr. Fox before and after the first minister's declaration, as internal evidence and the existence of another report reveals. The declaration that the Scotch Church would have better livings in the provinces might be a perversion of the earlier opposition to a lavish support of the kirk proud of its poverty; and the reporter's conclusion that the statesman considered official recognition of Presbyterian and Catholic creeds more justifiable than the Episcopal might be deduced from the latter's basic principle that the church of the majority should be the

state church and from his specific reference to the more numerous adherents of these sects. Such an argument that the Roman Catholic or Scotch faith ought to be established implies that these were the very denominations which were not to be established: by itself the statement gives the one as much right to participation as the other. In the separate reports of the two speeches, in the first, Mr. Fox, though still uncertain of the interpretation of "Protestant Clergy," understood it to include "chiefly . . . such . . . as were of the Church of England," and protested against setting up "any system of profusion in supporting the ministers of religion in Canada," many of that Kirk whose excellence and purity were due to its foundational "rock of poverty." In spite of Pitt's reply, he still considered the establishment of Episcopalianism the aim, as in his second speech he "thought it imprudent to establish any form of worship in Canada in preference to others, and particularly that of the Church of England, which was at present professed by so small a proportion of the inhabitants."

To Anglicans the best known record of the answer of the Chancellor of the Exchequer proved the reserves their reserves, the Established Church their church, the protestant bishop "by his rank and weight (to) strengthen the Established Church" their bishop. The Scotch denomination was not mentioned, nor granted an equal lawful status, nor represented by an official or board recognized by British law. The meaning of this act "was to commute the protestant tithes by an appropriation of one seventh of the soil for a clergy at once defined to be "the Protestant Clergy of the Established Church," which must have signified the Church of England, which alone among British sects possessed bishops, and which alone by this statute was to have rectorial endowments.

An antagonistic conclusion might be deduced from this speech. In the heat of debate English speakers through custom would call the Episcopalian "the Protestant Clergy of the Established Church" with no intention to proclaim it the Established Church of either Canada or the empire. The land set aside in commutation for the tithes authorized by the Quebec Act was to support a protestant clergy, a portion of which for discrimination, was to receive a part and possibly

the whole of the appropriation. One protestant church was to be favored, but other denominations not Catholic might be aided.

A fuller report of this speech in existence justifies the less apparent interpretation. "Mr. Pitt said that the clause allowed the Governor the discretion of distributing land to Protestant Clergy of any description; and though those belonging to the Church of England were to be the most encouraged, provision would no doubt be made for others, where it might be found necessary. . ." The appropriation nevertheless was designed solely to help as long as possible the Church of England. It alone was to be "the most encouraged." It alone was to be aided regularly without any previous address from the settlers of a parish. It alone was to receive rectorial endowments. "The Protestant Clergy of any description" in any district could only be assisted "where it might be found necessary," where the agitation of their adherents assumed sufficient dimensions to compel the governor to exercise his "discretion," and then they could only receive compensation for not being endowed.

To Mr. Dundas has been ascribed the assertion that "by the provisions of this Bill the Clergy of the Church of Scotland would have better livings in Canada than in Scotland." His speech as it stands does not sanction the deduction as it deals with Scotch and not Canadian livings. A more important statement by him in 1794 authorized Lord Dorchester to make "a temporary and discretionary" allowance to Scotch ministers at Quebec and Montreal, as "in framing the Canada Act . . . the reservation for the Church and Crown in all Grants of Land, was fixed at a larger proportion than was originally intended, with a view to enable the King to make from these reservations, such an allowance to Presbyterian Ministers, Teachers, and Schools, as His Majesty from Time to Time think proper." This despatch did not close the door of state aid in the face of dissenters other than the Scotch Presbyterian. It is completely in tune with the procedure prescribed by Mr. Pitt whereby any protestant clergy might be aided in case of agitation. The Scotch Presbyterians of the districts of Quebec and Montreal had petitioned Lord Dorchester, this governor had at once applied for permission to exercise his

discretionary powers, and Mr. Henry Dundas had conceded the claim, in this case from sources other than the reserves, not in the name of the Established Church of Scotland but of Presbyterianism in general. Mr. Pitt's policy dictated that his colleague should not acquaint dissenters of the method of securing state aid, but recognize only such as found it out for themselves. As long as the Kirk remained the sole petitioner, officially the word Presbyterian would be alone identified as the "any Protestant Clergy" recognized by the prime minister; but if Baptists and Methodists had petitioned in proper form there is no reason why they might not have been granted the same rights as part of the same clergy specially provided for in addition to the Episcopalian during the progress of the Canada Act.

Lord Grenville's reference in the House of Lords, May 30, 1791, to "the Protestant Clergy of Canada" is ambiguous. However, after a long lapse of years, in explaining before the celebrated Canada Committee of 1828 the statute, which Pitt the Younger and he had jointly drawn up and worded, he authorized Viscount Sandon and his father, the Earl of Harrowby, to define the disputed phrase. Consequently the committee in its report asserted "that the intention of those persons who brought forward the measure in Parliament was to endow with Parsonage Houses and Glebe lands, the Clergy of the Church of England, at the *discretion* of the local government; but with respect to the distribution of the Reserved Lands generally, . . . they sought to reserve to the Government, the right to apply the money, *if they so thought fit*, to any Protestant Clergy."

The different versions of this evidence of William Pitt's colleague supplement each other. The Church of England was to be provided for; others might be. Episcopalianism was to have its glebes, its parsonage houses, its income from the allotted lands generally; other protestant clergies might be aided "as the exigency of the circumstances might require," as the government might think "fit," as His Majesty might consider "discrete." Expediency was the magic key to unlock the future: it was to decide the area of the reserves to be or not to be set aside as rectorial endowments; it was to declare the assistance to be or not to be given to any dissenting sect.

Pitt had declared that protesting Non-Episcopalian congregations in the townships were to be "compensated" for lack of endowment; his colleague asserted that this compensation was to be derived from the income of the reserves generally.

That this evidence should harmonize so completely with one version of the chief speech of Britain's first minister, emphasizes the importance of that special record, and renders consistent the attitude of Lord Grenville in 1791 and 1828. The latter's stress of the importance of the "discretion" of the governor to twist the provision to "fit" provincial conditions and to help protestant sects at large "as the exigency of the circumstances might require" tends to show that they desired to interpret as long as possible the disputed term in the narrowest legal sense. Its two framers in 1791 could proclaim that all sects not Catholic might be aided if the future so dictated and still send governors of the Simcoe school to assist the Church of England out of all proportion to its numbers, if the dissenting majority tamely acquiesced, in order to bring within its fold most Canadians not Catholic and make the colony essentially English in tone and feeling.

By comparing evidence hitherto used and not used, by harmonizing apparent inconsistencies, the ecclesiastical clauses of the Constitutional Act which sowed more sorrow in the Canadas than all the other sections combined seem to come within the understanding, and a consistent policy of its framers appears through the mists. The war of words seems closed, and what is probably the greatest puzzle in Canadian history seems solved.²

²A full list of the authorities used in this article will be given by the author in a book to be entitled "The Puzzle of the Canada Clergy Reserves" upon which he is now at work, and which will summarize and criticize the arguments of the different disputants. In company with Professor W. L. Grant of Queen's University he is also preparing a volume of documents on the Clergy Reserves which is to be published by the Champlain Society of Toronto."

J. POWELL LAYCOCK.

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RUBBER, GUTTA PERCHA, AND ALLIED SUBSTANCES.

IN 1909 the India Rubber Journal, one of the pioneers in rubber journalism, celebrated its semi-jubilee by issuing a special souvenir number in a very elaborate style.

During the twenty-five years 1884-1909 there were no very great advances in the method of treatment of rubber goods, but the increased demand caused by the bicycle and motor trade made the older sources of supply altogether inadequate and occasioned the starting of plantations and made the reclaiming of waste rubber an industry of very considerable importance.

The largest manufacturing centre in the world for rubber is probably Akron, Ohio. There the industry was started in a small way in 1869; in 1909 there were thirteen rubber factories representing an investment of \$20,000,000 and having more than 10,000 employees. The greater part of their business was in pneumatic and solid tires, which indicates how large a factor these are in the rubber industry.

Rubber is obtained almost entirely from the latex or milky juice of certain plants, the majority of which are trees, though the source of the Congo rubber is mainly the creeper *Landolphia*. Latex is not the sap of the tree; it flows through vessels in the bark, the laticiferous vessels. Trees are tapped by cutting deeply enough into the bark to sever the laticiferous vessels but not sufficiently deep to injure the living cambium layer of cells between the bark and the wood which provides for the growth of the tree. The function of latex in the plant's economy is not certainly known. It may be an excretion, it may be intended for the protection of the tree from attack by fungus or insects or other enemy. Latex may be removed without danger to the tree if the latter has reached a certain stage of maturity which in the case of *Hevea brasiliensis*, by far the most important source of rubber, is six or seven years.

It is from *Hevea brasiliensis* that fine Para rubber, the standard of excellence, is obtained. It is native to the Amazon valley, which till within the last year or two has produced

more rubber than all the rest of the world put together. The great rival of Para rubber from the Amazon is the rubber produced on plantations of which those in Ceylon and the Malay States are the most important. In these plantations over a million acres are devoted to the growth of *Hevea*, and as each year larger and larger areas become productive, the output from the plantations has increased rapidly.

In 1876 seeds of *Hevea brasiliensis* were sent from Brazil to Kew Gardens and the young plants produced from these seeds were the same year sent to Ceylon and planted, forming a grove which has become historic but which was not exploited commercially. In 1899 there were only about 750 acres of rubber plantation in Ceylon; and in that year the first company was started in the Malay States. In 1906 about 400 tons of rubber (approximately one per cent. of the whole supply) was obtained from plantations; in 1909-10 the amount had risen to five per cent., and this year, for the first time, plantation rubber will probably surpass in quantity the product of the Amazon valley and be in the neighbourhood of 40,000 tons.

Hevea brasiliensis in its native forest frequently attains a height of 120 feet, but the greater part of the latex is obtained from the six or seven feet of the trunk nearest the ground, hence on the plantations the trees are not allowed to grow tall but are induced to spread out and to increase in diameter. To this end the trees are planted far apart, there being about a hundred to the acre.

In the Amazon valley about five pounds of latex a year is obtained from each tree and from this quantity of latex about two pounds of rubber is prepared. On the plantations, trees ten years old are expected to produce three or four pounds of caoutchouc. In 1908 nine thousand trees on the Cicely estate owned by one of the older Malay companies yielded an average of six pounds though the trees were between five and ten years old. The greater yield from the plantation trees is partly due to the method of tapping.

Hevea has a peculiarity which helps to make it a favourite species for plantations. When an incision is made in the bark the amount of latex which flows out is not usually very large but, curiously enough, when within a day or two another incision is made near by, there is a considerably greater flow

than before. In a particular experiment, when tappings were made at intervals of five days four trees on the first tapping yielded only 61 c.c. (about two ounces) of latex but yielded 449 c.c. (over seven times as much) on the fourteenth. The latex from the later incisions contains a less percentage of rubber but in this case there would be about five times as much caoutchouc from the last incision as from the first. Within limits, thin latex is better than thick because the latter is likely to coagulate on the tree, thus becoming contaminated with bark and other impurities.

The phenomenon of increased flow of latex when incisions are made beside the preceding ones is called "wound response" and is exhibited to any appreciable extent only by *Hevea*. Its cause is not well known but seems to be connected with the fact that in *Hevea* the laticiferous vessels do not run into each other as they do in most other latex bearing plants. On this account, in the case of *Hevea*, the latex is not drained from any large area on the first incision, as blood would be from an animal when an artery is cut. It may be that after an incision latex flows towards the wound in order to repair the damage. Wound response is taken advantage of in the method of tapping employed on the plantations. A vertical groove is made in the tree from the base to a height of six or seven feet and side grooves a foot apart are cut in a slanting direction leading down to this vertical groove. Each day or every alternate day a thin paring of bark (about one-twentieth of an inch) is removed from the side grooves so that after about 240 parings the entire bark between the original incisions is removed. A quarter of the tree is tapped in this way in a season and then another section of the tree is attacked; and by the time the bark has been once removed from the whole tree, new bark has so far developed that the operation can be repeated.

In the Amazon district water is evaporated from the latex leaving the crude rubber, by heating it over a smoky fire. Latex is poured over a long wooden rod and dried in the smoke. Then a second quantity of latex is poured upon the thin sheet thus formed and it also is dried. In this manner, layer after layer is produced till a lump weighing from twenty to one hundred pounds is obtained. On the plantations the caoutchouc is coagulated from the latex by the action of acetic

acid. The rubber occurs in latex in the form of globules of microscopic or submicroscopic size and during the coagulation these globules stick together and produce a spongy or reticular structure. Dried rubber still retains the same structure, and in what are ordinarily called solutions the globular form of the particles may still be seen. Petroleum spirit and benzene are two of the solvents most used. The solution is not homogeneous like a solution of sugar or salt in water. It consists in breaking up the coagulated mass into submicroscopic particles forming what is called a colloidal solution.

Ordinary rubber expands on being heated but stretched rubber, curiously enough, contracts. This phenomenon was predicted from the fact that the stretching of rubber heats it instead of cooling it as is the case with metals. The heating of rubber by stretching it can be observed by stretching a piece on the bulb of a delicate thermometer and the contraction of stretched rubber by heat can very well be shown by stretching a tube to two or three times its length by a weight and then passing steam through it. A tube of a few feet in length will contract nearly as many inches.

The best rubber is mainly a hydrocarbon of the empirical formula C_5H_8 , that is, it contains sixty parts by weight of carbon, to eight parts by weight of hydrogen; since C stands for twelve parts by weight of carbon, while H stands for one part by weight of hydrogen. There is, in rubber, a small amount of resin, a little protein, about one per cent. of inorganic matter, and approximately 92% of the hydrocarbon which may be considered as the pure caoutchouc.

Pure rubber softens too readily with rise of temperature and hardens before the temperature has fallen much below normal and the range of temperature through which it retains its properties of toughness and elasticity is too limited, but by the addition of sulphur the range of temperature can be much extended. Rubber can be made to take up sulphur in various ways, the process being called vulcanisation. One method is by heating with sulphur, another by treating in the cold with a mixture of chloride of sulphur and carbon bisulphide. The properties of vulcanized rubber vary with the amount of sulphur, soft rubbers contain 3-4 per cent., while hard rubber or ebonite contains 20-30 per cent. The sulphur

seems to be at least partially combined in some form with the sulphur. No matter how much sulphur may be mixed with the rubber or what the temperature or length of time, the maximum of combined sulphur is about thirty-two per cent.

Vulcanization, though beneficial in the manner stated, unfortunately renders rubber more easily acted on by the oxygen of the air, the sulphur becoming oxidized, thus destroying the usefulness of the rubber goods. Anyone who uses rubber tubing is aware that after a very few years it becomes valueless. Pure rubber is much less acted on by the air. There are samples of raw Para rubber in Kew Museum which have almost certainly been there more than sixty years, and Terry in his book on india rubber says that he possesses a specimen of rubber thread which has been exposed to the air for forty-five years and is still sound. Notwithstanding the effect of sulphur in shortening the life of rubber goods, nothing has been found to take its place, and so far as can be seen now, this disadvantage must be endured.

The elastic character of rubber enables it to bind together other substances so that rubber is very frequently mixed with other materials of a very varied nature. Sometimes these materials are used for their colouring power, sometimes to make the rubber heavy or light as may be required, in many cases because the extraneous substance is cheap. Two samples of rubber may look a good deal alike but one of them by containing one or two per cent. more of adulterant might sell at a lower price than the other and still yield a greater profit. The competition between manufacturers may thus be a competition in the quantity of adulterant. So far has adulteration been carried in some cases that rubber has been facetiously defined as "an elastic material for binding together chalk and other minerals in the manufacture of certain goods."

A few of the materials used for compounding with rubber are antimony sulphide, and vermillion, which give a red colour, lampblack, litharge and white lead, whiting, zinc oxide, and barytes, and the list might be enlarged almost indefinitely. A substance that is certainly not added on account of its cheapness is oxide of gold, and to the same category belongs whalebone, whatever may be said about powdered coal and fuller's earth.

Rubber articles which come in contact with foodstuffs should contain neither lead nor zinc compounds which might be soluble in organic acids. Some of the compounding substances are acted upon by alkalies and should be avoided under certain circumstances. Elastic thread requires specially pure rubber. It should be capable of stretching seven times its length without breaking, and except in the case of a special brand of red thread whose colour is produced by antimony sulphide elastic thread is composed exclusively of Para rubber and sulphur.

Owing to the cost of rubber, processes for recovering or reclaiming it have been carried out, with greater or less success. Old rubber goods of various kinds are used, but in America rubber shoes are most popular, while in England, since rubber shoes are not much worn, motor and cycle tires are largely used.

Rubber when reclaimed is not brought back to its original condition; it is merely freed from certain materials and brought into a plastic condition which will allow it to be used for some purposes. In the case of waterproof cloth, if the cloth attached to the rubber is of wool it may be removed by heating with a dilute solution of alkali. Cotton, however, is not destroyed by alkali but sulphuric acid of a certain strength (12-20° Beaume) removes the fibre without destroying the rubber, while either a weaker or stronger acid is harmful.

There is a mechanical process for treatment of old rubber by which it is finely ground or torn into very small fragments, and the powder after being run over magnets to extract particles of iron, is subjected to a current of air to remove materials which like shredded canvas are of a fluffy nature. The rubber is then heated in hot air stoves usually with the addition of some petroleum which makes it plastic enough to be rolled into sheets. This treatment is said to remove the common characteristics of vulcanized rubber, but vulcanization can be again brought about by the addition of sulphur. It seems that rubber from which free sulphur has not been removed cannot be rolled into sheets without the addition of petroleum or some similar substance, but in a process which has been used the fine powder described above is heated under pressure in caustic soda solution which removes free sulphur

and gives a material which can be sheeted without the addition of oil. Several processes have been employed for removing uncombined sulphur from rubber, but no process has so far been invented for removing combined sulphur, which in vulcanized goods is the greater portion. In most cases too, the inorganic filling, such as French chalk, fuller's earth, etc., is not removed. Hence it will be seen that reclaimed rubber is far from being identical with raw rubber.

Guttapercha is a substance somewhat similar to rubber but it is far from being identical. The chief constituent is a hydrocarbon having the same composition as caoutchouc, that is, the percentage of carbon and hydrogen is the same but the properties are a good deal different. There is in general a larger quantity of resin in guttapercha than in rubber and the resins are of a different character. In the analysis of one sample the resins are given as 22%, the remaining 78% being the hydrocarbon gutta whose empirical formula is like that of caoutchouc, $C_5 H_8$. In some cases the resins and dirt in raw gutta percha amount to over 50%. The term resin is applied to bodies of different character and uncertain chemical structure. They are often oxidation products of hydrocarbons and contain a larger or smaller proportion of oxygen. Some of them are acted upon by alkalies and they can be dissolved by some substances that do not attack the hydrocarbons of guttapercha.

Gutta-percha is derived from the latex of quite different trees from those which produce rubber. These trees are native to the Malay Archipelago and neighbouring districts, and do not seem to be capable of cultivation elsewhere. Plantations have so far not been made. The trees are not tapped as in the case of the rubber trees, but for the most part are cut down though lately attempts have been made to extract gutta-percha from the leaves and twigs by the action of solvents.

Gutta-percha differs from rubber in not being tensile; it cannot be stretched in the same way. Another very important difference is that at a temperature below that of boiling water it becomes plastic and can be moulded, the shape being retained on cooling. It is more acted on by the air than is rubber but it keeps well under water, especially salt water. It is not porous to water as rubber is. Rubber though used for water-

proofing is not wholly impervious to water and in fact absorbs about 25% into its pores if soaked for some time. Hence for the sheathing of cables gutta-percha is a much better insulator than rubber and this is the great use to which it is put. The next most important use is for golf balls. These were formerly made of solid gutta-percha, but now the core is of rubber thread or ribbon and the outside of gutta-percha. The uses to which gutta-percha is applied preclude the mixing of it with other materials and it is not vulcanized. It can be vulcanized as rubber is, and it has lately been claimed by some investigators that the greater the degree of vulcanization the more nearly does the product approach that obtained by the vulcanization of rubber, and that on complete vulcanization the substances are identical and it is suggested that the difference between the hydrocarbon of rubber and of gutta-percha is a physico-chemical one.

The trade in gutta-percha fluctuates and depends mainly upon the demand for submarine cables; for instance, in 1897 the export was 3000 tons, in 1899 it was 8000 tons, but as soon as the all British Pacific cable was completed the exports declined again. It will be seen that, so far as quantity is concerned, gutta-percha does not at all rival rubber.

Gutta-percha is derived from the latex of *Dichopsis gutta*, a species belonging to the order Sapotaceae; another species, *Mimusops balata* belonging to the same order yields a substance similar to gutta-percha which is called balata. The tree is found in the West Indies, in Venezuela and in the Guianas. Balata is most easily obtained from the trees by cutting them down and in Venezuela this is done, while in Guiana, where the government is more stable and effective, and thus proper supervision is more possible, the trees are tapped.

Balata is more resistant to atmospheric influences than gutta-percha is and it has a greater toughness. This makes it superior to gutta-percha for driving belts. The belting is made of strong canvas which is impregnated with a solution of balata in naphtha and, after the solvent is evaporated, as many plies of canvas as are required are sewn together and subsequent pressure so forces the balata into the interstices of the canvas as to produce a belting quite rigid at ordinary tempera-

tures, though not suitable for hot climates. The balata is not vulcanized and the belts seldom stretch. They are largely used in beet sugar factories, this belting being found most suitable for withstanding the chemical solutions employed.

A number of rubber *substitutes* have been patented and some have been used. Perhaps the most notable are those that have gone under the names of white substitute and dark substitute. Both are produced from oils like linseed and colza; white substitute by treatment in the cold with chloride of sulphur, and dark substitute by heating at a temperature of 380° Fahr. with flowers of sulphur. In the ordinary solvents for india rubber they merely swell up, but if mixed with a sufficient quantity of rubber the combination goes into solution. Most of the rubber substitutes are lacking in elastic properties and they have therefore attained their greatest success in water-proofing and electric insulation where stretching is not required.

The principal unsatisfactory feature of rubber and rubber compounds is the proneness to deterioration by the action of the oxygen of the air. A material has been lately produced which it is claimed has many of the properties of hard rubber or ebonite and does not oxidise. Most of the substances that have been suggested as substitutes for hard rubber, such as shellac compounds, are even more readily oxidizable than ebonite itself. The new substance is called *protal* and is a combination of two kinds of albumin. The base consists of a vegetable albumin derived from the nuts of various kinds of palm, to this is added animal albumin along with suitable solvents and the two apparently form a chemical combination quite different from either. The name is intended to indicate the origin of the material, being formed of part of the words *protein* and *albumin*, and may be regarded as representing the numerous or protean forms in which the material is obtainable. When first made, protal is perfectly plastic, but it soon acquires the hardness of stone. On rewarming, however, it resumes its plasticity sufficiently to permit of its being moulded under pressure into any shape or form. When moulded, it takes sharp and clear impressions. Any colours and pigments can be incorporated with protal compounds and they can be dyed with aniline dyes.

There is a substance called *bakelite* made from a mixture of carbolic acid and formaldehyde, both of which are strong smelling liquids. They react chemically upon each other and solidify to an amber-like solid having neither odour nor taste. Bakelite is obtained in different forms and it is claimed that it offers the advantages of hard rubber, Japanese lacquer, or celluloid, and in some respects excels the properties of these products. Though harder than celluloid or hard rubber, and for some purposes therefore better, it has not so great flexibility as these substances. Bakelite resists the action of steam, oils and even 10% sulphuric acid. Bakelite may be mixed with protal forming protal bakelite which is said to possess the following advantages over hard rubber: it does not soften by heat as rubber does, it is not attacked by oxygen or ozone or by oils or greases, it contains no sulphur and therefore there is no possibility for the formation of sulphuric acid to cause deterioration.

If considerable flexibility is required, protal is mixed with other substances and from some of these combinations, automobile and bicycle tires are made.

How far protal compound will be able to compete with rubber in cost may be a question. In 1910 it was said to compare extremely favourably with the price of hard rubber at that time, but 1910 was a year in which rubber was exceptionally expensive.

Genuine rubber, which is, of course, to be clearly distinguished from rubber substitutes, has been made artificially, but so far it is not a commercial product. The scale on which it has been manufactured is indicated by the fact that it is considered worthy of note that a set of automobile tires of artificial rubber was presented to the German Emperor. Artificial rubber is many times more expensive than natural rubber, whereas, in order to become of industrial importance it will need to be not only cheaper than plantation rubber now is, but cheaper than it is likely to be for many years to come.

JOHN WADDELL.

EDUCATIONAL READJUSTMENT IN THE UNITED STATES *

When we come to a consideration of the wider and more theoretical aspects of the question of educational readjustment, we find that much attention has been given in recent years by various important educational bodies in the United States to the general problem of "Waste in Education". This is doubtless due in great measure to the widespread discussion of the problem of efficiency in all forms of industrial and social activity. And efficiency, on the negative side at least, means the avoidance of waste whether that waste be of material or of human life and energy.

While the reports and other publications which have dealt with the problem of educational waste cannot be said to express a settled conviction on the part of the American people as a whole, they certainly point to a very deep-seated unrest in the popular mind and to a thorough-going effort on the part of many leaders to re-shape educational policy in the light of a clearer knowledge of the social needs of the present day.

The space available in the present article makes it possible to refer only to one phase of the problem, that of the relation of elementary to secondary (or high school) education, and to but four of the more significant of recent publications in which this very important question is specifically treated.

The first of these publications is the "Report of the Committee of the National Council of Education on Economy of Time in Education", published by the United States Bureau of Education as Bulletin No. 38 for the year 1913. Under the heading, "Economy in Elementary Education", is found the following statement: "The Committee agree that there is much waste in elementary education and that the elementary period should be from the age of six to the age of twelve". They make in this connection the following specific recommendation: "Include (in the High School) the last two years

*An extract from a report presented to the College and High School Department of the O. E. A., April, 1914.

of the elementary school or the period of elementary education and begin the study of foreign language, elementary algebra, constructive geometry, elementary science, and history two years earlier. Under the heading, "The High School Problem," one reads as follows, "The proposal to make the high school period 12-16 or 12-18 will adjust itself in the following ways: (1) It begins high school work at the proper time and continues it to the recognized age of college admission or of beginning life (12-18); (2) it provides for a large number who begin vocations at 16 and adjusts itself to the idea of an intermediate industrial school (12-16)".

A second publication entitled "Preliminary Statements by Chairmen of Committees of the Commission of the National Educational Association on the Reorganization of Secondary Education", (published by the U. S. Bureau of Education as Bulletin 42 for 1913), enumerates a series of problems whose solution takes logical precedence of the general problem of the content of the various high school courses. The first of these is, "What is the most effective division of the school course?" Is it, for example, that which provides an intermediate school to include grades seven, eight and nine (i.e. the seventh, eighth and ninth years of the school life of the ordinary pupil)? The fact that this question appears so prominently shows clearly that the representative educators concerned feel that the problem of the general division of the school course is fundamental to all questions as to the nature of the curricula in different subjects and in different types of school.

The question of the Intermediate or Junior High School is dealt with specifically in the Report of the Carnegie Foundation for the Advancement of Teaching on "Education in Vermont". This report is the work of a body of experts (so-called) and constitutes a "survey" of educational conditions in the state in question. The writer of that section of the report which deals with the Secondary Schools (Professor William S. Learned, of Harvard University) finds much to say in favor of this type of school as meeting a very genuine need in the state under consideration.

He finds in Vermont a considerable number of small high schools, poorly manned and poorly equipped. These schools,

he remarks, are aiming at a goal that is beyond them, i.e. a four years' course. This, he says, is particularly true of the two-teacher schools, "little, straining, distorted institutions, excessively expensive and excessively wasteful in proportion to their service." "The salaries of the teachers are so low that no college man or woman can afford to take them except as an unlucky last chance." "Save in rare cases, the burden of subjects and of class changes is so great as absolutely to preclude effective instruction. This, combined with a characteristic wide-spread lack of experience on the part of both principal and assistant, and an exceedingly abstract curriculum, presents a situation requiring monumental endurance for even a determined pupil, to say nothing of the wavering pupil whom education seeks more and more to reach and hold. The two-teacher type of school is thus an actual discouragement to education."

The solution which Professor Learned suggests is the restriction of the work of the smaller high schools to that of the first two years and the development of a system of central high schools in which the relatively difficult and expensive work of the last two years of the course can be carried on effectively by bodies of well-paid and well-trained teachers. "The lower half of the high school thus divided might then proceed to avail itself of one of the finest educational opportunities ever presented. It could make a complete revision of its unsuitable curriculum and its wasteful organization. The first step would be the consolidation of the first two years of the high school with the last two years of the elementary school into a compact, closely articulated unit to be known as the junior or intermediate high school."

The reasons urged in favor of this new type of school are in part psychological and in part social and economic. Professor Learned's own statement of them is as follows:

"The considerations favoring the creation of a new school unit of this sort are of unusual weight. In the first place, a course beginning with the seventh grade puts the point of cleavage at about the age of the great natural divide in youth's experience. All who deal with children at this age know that the adolescent is in a different world from that which surrounds a child one or two years younger. The

years at this stage should deal with the rush of new impulses and activities in a wholly different manner from that familiar in the "grammar" school. They should be planned expressly for adolescents instead of passing, as now, in a desultory conclusion to the intermediate grades. In the second place, a well-constructed junior high school course would close up the gap, now woefully broad, between the grades and high school. Taking the child while still of compulsory school age, the aim should be to hold him through full four years. The failure of the present type of high school to do this is not greatly to be wondered at, and need not necessarily cause misgivings. The junior school would be much more sensitive to the causes of such failure, and could treat them with a better chance of success than the present organization. Again, the leaving age in such a school would meet what appears to be a genuine demand. This is shown most strongly, perhaps, in the great elimination at the end of the first and second years of the high school as it is constituted at present. Many other indications show that a form of school would be welcomed which, while an appreciable advance upon the elementary school, would set boys at work at about the age of sixteen. Finally, reference may be made to the physical ease with which the proposal could be carried out. Practically all of the schools that this arrangement would affect are already housed with the elementary grades, and reconstruction would be wholly or largely an internal problem."

We find in the extreme west of the United States another school system which has been weighed in the balances of the educational expert and found wanting in the matter of a satisfactory articulation of the elementary with the secondary school. A little over six months ago there appeared the "Report of the Survey of the Public School System of the City of Portland, Oregon". This report was compiled by a committee of investigators made up of three university professors of education and two Superintendents of city school systems with Professor Cubberley of Leland Stanford Jr. University as chairman. They unite in recommending for Portland a system of intermediate or junior High Schools and support their recommendation by arguments very closely resembling those which have just been quoted from the report of the

Vermont Survey. This similarity in viewpoint between East and West shows how rapidly educational sentiment throughout the United States is approaching unanimity on this very important question.

H. T. J. COLEMAN.

MECAENAS.

Although from off the far Esquiline Hill
Time's wing hath brushed the festive board which thou
Did'st there for Tuscan Culture spread, and now
Dim ghosts of Greatness do the old seats fill,
Thou, friend of Poets, are remembered still;
For thou didst aid the sacred choir of song,
As when some patron guards the birds from wrong
Till all the groves with music are athrill.

Ah! had our Chatterton found one like thee—
Some star that had relieved his night of gloom,
Some one befriending modest poesy,
Then in Affection's plot, today, a tomb
Were close to thine; for every child of Art
Would keep that name, safe-hidden, in his heart.

ALEXANDER LOUIS FRASER.

Great Village, N. S.

LIFE OF THE SETTLER IN WESTERN CANADA BEFORE THE WAR OF 1812.

HISTORY during the greater part of its conscious period has been a record of the exceptional and dramatic events of personal heroes and of dynastic and national crises. Written for entertainment rather than for instruction, it dealt mainly with strife and adventure—the tragic and unusual phases of life, not its every-day and prosaic course. We have not, of course, dropped the earlier aspect of history nor do we wish to do so, but with the rise of democracy interested in the welfare and development of all sections of the people, we have broadened the outlook and deepened the interest and insight.

We have still, however, to depend upon the records which have come down to us for the reconstruction of the past, and the actual records of the common people are not considered worthy of preservation by reason of any intrinsic interest. Such records as we have regarding the lives and interests of the common people were not intended for historical purposes. The information is nearly always incidental to what were considered the larger interests of life, or is to be obtained from records preserved for family reasons or for corporate or business needs. These unintentional witnesses are all the more independent of special coloring, but for the same reason they are fragmentary and uncertain, requiring much piecing together and considerable explanation and interpretation.

In dealing with the settlement of a new country like Canada, we find much difficulty as to adequate contemporary records, though interest in the pioneer period is certain to increase as it recedes from the newer generations. It becomes increasingly difficult to restore the daily life of the settlers and to understand at once the difficulties with which they had to contend, the means which they were forced to employ in overcoming them, and the success or failure which attended their efforts. Yet a somewhat detailed understanding of their circumstances is indispensable in estimating the influences which their lives and achievements have had upon the subsequent development of the country, its economic conditions and social and political institutions.

The following sketch is based chiefly upon the somewhat unique record of the daily life of a pioneer of the Burlington Bay District, known in early days as "the head of the Lake." This record is the personal diary of Benjamin Smith, born in 1773 in Sussex County, New Jersey, his parents having come from Ludgate Hill in London. He came to Canada with his father, not as a loyalist of 1784-5, but in the subsequent immigration as a sympathizer with the British cause. In 1794 he married and started life on a new farm in the neighborhood of Lancaster. At the same time he began a diary for his own information. This is simply a brief daily record of his ordinary employment alike on the farm and in going and coming throughout the district. All the entries are simply statements of fact, there being no comment or expressions of opinion. The diary is thus a photographic record of the daily life of a pioneer farmer. That portion of it prior to 1799 has been lost and there are a few sheets missing here and there. The original, it is understood, is now deposited with the Ontario Archives at Toronto.

Being a daily record of the round of farm duties, journeyings to the mill, the store, the neighboring farms, etc., there are necessarily many repetitions of practically the same entry. This in itself, however, is useful as enabling one to measure the relative amount of time and attention given to the various occupations of that period. It indicates also the changes which took place with the passage of the years in the relative importance of this or that occupation or duty. As the settlement developed, the farms were cleared up and facilities increased for disposing of additional lines of produce and procuring new conveniences and supplies. The present sketch is confined to the period between the beginning of the century and the outbreak of the War of 1812. The central record is supplemented, especially as to prices and in many other particulars, by information derived from other unpublished records, still in the possession of private individuals in the same part of the country. For the opportunity of making copious extracts from the diary itself and from other early records, I am chiefly indebted to Mr. Joseph Smith, Inspector of Schools and historian, of the County of Wentworth.

When the settler arrived in the wilds of Western Canada

or took up a new bush farm in the rear of existing settlements, his first work after selecting the location for his home was to make a small clearing and erect a log house or shanty. In size this was as a rule about ten feet by fifteen feet. Basswood, being the timber most easily cut, split and handled, was commonly used for both walls and roof. As, however, it rapidly decayed when exposed to moisture, some more durable timber, preferably cedar if at all available, was employed for the foundation logs and for the support of the floor slabs. The logs were notched into each other at the corners, this process serving the double purpose of holding them firmly together and bringing each log of the wall into contact with the one above and below it. One side of the log walls was carried somewhat higher than the opposite one, the higher side forming the front, and the lower, the back of the house. In the centre of the front was a door and on one, and sometimes both sides of it, a small window, these being the only openings. As few of the logs closely fitted upon each other, the spaces between them were filled with triangular pieces of split basswood, while over these was plastered as firm a clay as could be had in the neighborhood. At first the chinks or spaces between the logs might be temporarily filled with dry grass or moss.

The first roof might be of elm or basswood bark supported on poles. A more durable roof was made of basswood logs of ten to twelve inches in diameter, split in two and hollowed out in the centres, forming long troughs. These were then laid along the roof in a double row sloping from front to rear. The first row was placed with the hollow side upwards and the other with the hollow side downwards, covering the cracks between the adjoining edges of the lower row. In this way the edges of the upper row joined in the troughs of the lower side, thus furnishing, so long as it remained in good condition, a completely water-proof roof. The fire-place was constructed on the rear wall of the house, with a squared opening through the lower logs, the chimney being built of small stakes imbedded in clay. This fire-place furnished the means of warming the house in winter and of cooking the food for the family. The first bed was made by simply driving stakes into the walls in one corner of the room, thus requiring but one leg for the

bed in the room itself. This rude frame was then covered with slender stakes supporting the general body of the bed, composed of moss or straw on a foundation of small branches. Home-made blankets completed the equipment. Tables and benches were made in much the same way.

A stable for the live stock in winter was commonly made by cutting into the neighboring bank and building up the front and sides of the opening with logs. Above this was usually constructed a shelter of logs roofed in the usual way and furnishing storage for grain, the first farm implements, etc. This structure was commonly known as a "hovel." Other minor farm buildings followed in due course and as soon as the settler had gained a little time and capital, he erected more substantial buildings, commonly the barn first and the house second.

Few of the pioneer farmers found it necessary to clear their land of trees before beginning to crop it. The primitive hardwood forests were as a rule remarkably free from undergrowth, such as there was being easily cleared out. The trees being of large size on the best soil did not stand very closely together. Instead, therefore, of cutting down such timber, which would be very difficult to handle and dispose of, the settlers simply girdled the trees in the spring. This meant that they cut from each tree a complete ring of bark, thus preventing the flow of the sap, with the result that the tree, being unable to leaf out, simply died. There being no foliage to obstruct the rays of the sun, the farmer simply sowed and raked in his grain in the rich loose soil formed from a long accumulation of decayed vegetable matter. As the result of this limited labor, he commonly reaped a very satisfactory crop.

The dead trees dried more rapidly standing than falling and in a year or so most of them might be burned as they stood. The remnants of the forest were cut down and gathered into log and brush heaps to be subsequently burned. These log heaps in turn, especially those made up from hardwood trees, such as maple, beech, birch, etc., furnished large quantities of wood ashes rich in soluble alkali salts, especially potassic carbonate. The ashes were therefore gathered together into rudely constructed receptacles, usually sections of hollow trees,

placed on a drainage platform of split slabs. By draining water through these when filled with ashes the soluble salts were dissolved, and the alkaline solution, known as lye, when evaporated, furnished the commercial article of potash; when further purified and calcined this was known as pearlash. These substances, together with wheat and furs, constituted the three chief articles of export furnished by the early settlers of Upper Canada. In return for these they obtained their first imported supplies and what little money the early settlements contained.

Summarizing the mass of individual records contained in the diary, we may trace the work of the pioneer through the sequence of the seasons. Early in the spring of almost every year we find our diarist girdling a new section of the forest farm preparatory to bringing it under cultivation. He has already cut out such timber as he requires for fences, fire wood, transport to the sawmill, after its erection. From the timber and lumber thus obtained we find him from time to time constructing such new out-houses and buildings as are most urgently required, or he has the time or means for completing. In the early spring, also, he was accustomed to make a limited amount of maple sugar, the amount increasing with the increase of his family, who were able to render him material assistance in the work of gathering sap and attending to the boiling down or evaporating process. Naturally the maple tree was almost the sole source of sugar for the early settlers. Cane sugar, when first imported, was an article of exceptional luxury. In any case, however, the settlers used but little sugar as compared with later generations. In quite a number of cases farmers with adult families manufactured considerable quantities of maple sugar, disposing of it through the local merchants, who sent most of it on to Kingston and Montreal, although but little of it was ultimately exported.

Immediately the snow was gone, foundation logs were cut and laid for new fences. Above these split rails of basswood or cedar were built up, forming the well-known snake fences of the country. Later we find the straight fence with stakes and rails coming into use. The older fields, as they were cleared of stumps and logs and brought under the plow, were fertilized from the barn yard before the plowing began. From

an early date the settlers in the Niagara District began setting out fruit trees. As their clearings enlarged and space was afforded, the original small orchards were enlarged. We find Mr. Smith setting out a few new trees and shrubs nearly every spring, beginning with 1800, when he set out several apple trees, three pear trees and one cherry tree. In 1802 he set out his first peach tree. Later we find him raising seedlings on his own farm and apparently supplying trees to some of his neighbors in addition to meeting his own needs.

The regular occupations of plowing and spring planting occupied most of the time during April and May. The root crop followed the grain crop, while corn, pumpkins and, later, melons, were planted about June 1st. Before and after planting were the chief seasons for burning brush and rolling up log-heaps. When these were carried on upon a larger scale, resort was had to the inevitable co-operative institution known as a "bee," the characteristics of which are dealt with later. Disastrous experiences from bush fires had proved that it was too dangerous, especially in dry seasons, to undertake the burning of brush during the late summer and early autumn.

During the latter part of the month of May, the farmers washed their few sheep in some neighboring stream or pond and immediately sheared them, thus obtaining the precious supplies of wool to be converted into home-made clothing for the family.

Between seeding and harvest, the work of clearing the land went forward. Logs were prepared for the mill and for domestic buildings during the following winter, when the snow roads greatly lightened all such work. This, too, was the season for all kinds of miscellaneous summer work, such as cultivating the root crops, repairing fences and buildings, getting the simple home-made tools and conveniences repaired for the gathering of the crops. The grubbing of stumps in the summer following also occupied the attention of the farmers, thus preparing the land for the sowing of the fall or winter wheat and rye.

For the rough work of logging and cultivating among stumps and stones as well as for much other heavy work on the pioneer farms, oxen were commonly preferred to horses. They were, of course, slow and even exasperating in their

solidity but they were much steadier and less excitable in critical positions. Even after horses were procured, Mr. Smith found it safer to employ the oxen, as witness this entry of June 2nd, 1807: "Plowed with the mares and got hurt; plowed with the oxen." Oxen were also much cheaper, more easily housed and fed, and less liable to stray away when let out to forage for themselves. In case of need also they could be fattened and turned to account as food, while their hides made the very best of leather. As the beginning of the century a pair of horses were worth from £75 to £85, or \$300 to \$340, while a yoke of oxen could be had for about \$100, and cows for \$50 each. These prices, however, were high as compared with later years.

When the harvest once began, all other work was suspended until the crops were safely housed. Close on the heels of the hay crop came the rye and the fall wheat. Before 1800 the farmers of that district had already passed the stage of the sickle and had reached that of the scythe and the cradle, the latter for the grain crops which were to be bound in sheaves. Here again co-operation came in. Hired help being very limited and uncertain, farmers who had grown-up sons must assist each other with the harvest, one cutting and another binding, one loading and another building the load and the stack. As yet there were few barns large enough to house the crops. The earliest form of shelter for the crop was the "barrack" or "Dutch loft." This consisted of a durable roof of thatch or other light material and which was made either round or square in shape, supported at the edges or corners on four tall posts pierced with holes at regular intervals through which stout pins were passed and which held the barrack roof at any required distance from the ground. The roof could thus be raised or lowered according to the amount of grain to be stored under it. This permitted the grain to be removed to the barn or threshing floor in any quantity desired without exposing the remainder to the weather. These structures were, of course, made by the farmers themselves. From 1802 the diary makes frequent reference to raising or lowering the barrack and the deposit thereunder of various grains, including flax. When sawn lumber became available, large frame barns were constructed and the barracks passed out of use.

Once the main harvest was past, the autumn plowing took place and the last touches were given to the land prepared for the fall wheat or rye. The seed grain for the autumn sowing was carefully selected from the best sheaves in the field, which were the first to be threshed and cleaned. The threshing of the main crops continued at intervals as time permitted or need required during the autumn and winter. At first only the flail was used, an instrument consisting of two rough hardwood sticks of about four or five feet in length joined to each other at one end by a leather thong, sometimes with a swivel intervening. Holding one of these sticks in the hands, the thresher beat the grain with the other. Some little experience was necessary to acquire an easy and effective swing. Later when the farmers acquired oxen and horses, these were frequently used to thresh the grain by tramping it out in the ancient and orthodox fashion on the floor built of boards or of hard-beaten earth. When the floor was made of boards, the seams or cracks were "corked" or "calked" to prevent the grain from falling through. The straw being easily separated from the wheat and chaff by the ordinary rake or fork, the chaff was next separated from the grain by winnowing it in an open space in a stiff breeze. Owing to the light black earth midst which much of the grain was grown, and the process by which it was threshed and winnowed, the wheat, at least, required to be washed and dried, a process undertaken by practically all of the early settlers. After 1807, when windmills or fanning mills driven by hand became common in that part of the country, we find in the diary no further reference to the washing of wheat.

After the summer grains had been harvested during August and September, the corn was gathered in the first half of October and during the latter half of the month the pumpkins were brought in, as also the apples, then the potatoes and other roots. At that time practically all the winter apples, potatoes, turnips and even pumpkins, cabbages and other vegetables were stored for winter use in pits dug in the earth. The pits were located in a dry spot and after being lined with straw, if available, the fruit or vegetables were placed in them, the contents covered with straw and then with earth to a depth of two or three feet. In the climate of Southern Ontario and

in sheltered locations, the contents of these pits were entirely protected from frost, the protection being doubly secure when a good fall of snow was added. Portions of the contents could be removed at intervals during the winter. When carefully prepared this process proved an excellent form of cold storage, the contents of the pits being preserved in prime condition throughout the winter and even late into the spring.

In October the flax was pulled just before the seeds were quite ripe, enough being left to mature for seeding next year. It was then laid out in the fields to be partially rotted in the autumn rains. By this process the bast or intermediate fibre was loosened from the outer skin and the inner woody stock. After having reached the proper stage of decomposition, about the beginning of December, the flax was dried and stored, awaiting the more leisurely process of breaking which, like the threshing of the grain, went on at convenient intervals during the late autumn and winter. The breaking of flax consisted in pounding it with a heavy wooden mallet on an uneven surface, thus breaking up the partly decayed woody fibre. It was then roughly dressed and handed over to the women of the household who finished the dressing, spun it into threads and wove these into various fabrics. The women accomplished the same process with the wool from the sheep. After being scoured it was carded or combed with small hand cards and deftly shaped into loose rolls of twelve to eighteen inches in length. These were then spun into threads at the spinning wheel and afterwards woven or knitted into cloth or garments. A very durable form of cloth was made by the early settlers, as by their ancestors in Europe, from a combination of linen and woollen threads, the linen being the warp and the woollen the woof. This cloth was known as "linsey-woolsey."

One of the important phases of late autumn work for those who had acquired a number of hogs was the killing, dressing and salting of the hogs. Salt or pickled pork was one of the articles of increasing demand, by the Government for the supply of the troops and those employed on public works, vessel owners and others engaged in transportation, new settlers going into the woods, and lumbermen getting out timber for export. These and other sources of demand united in fur-

nishing an excellent market for salt pork, as well as for flour, peas and beans.

Once the press of harvest work was over and the remaining duties did not press so much for time, it was possible for the community to indulge in social gatherings. Most of these, however, were given a more or less thrifty turn. At this season of the year "bees" were appointed on all possible grounds. There were bees for corn-husking, apple-paring, logging, barn-raising and various other special purposes. The neighbors from far and near were bidden to these co-operative gatherings. Considerable preparations were made for them in the way of refreshments. The granary, the barn-yard, the orchard and the garden were duly laid under tribute. There were also fish from the river or lake, wild fowl or other game from the forest, and the inevitable cask of spirit from the still, which in the evolution of the early settlement arrived with the mill, if not preceding it. With a few supplementary supplies from the trading store, a bountiful and appetizing supply of refreshments were duly prepared in advance. Unfortunately the means at hand for adequately setting forth the repast were necessarily somewhat meagre, but where all were under much the same limitations, envy was not started or disdain feared. Even the work which preceded the entertainment was accompanied by much mirth and strenuous competition. After the specific duties of the bee were ended, the young men indulged in trials of strength, while their elders discussed the crops, prices, local politics and the prospects of the ensuing year. The elderly women extended the circulation of the personal gossip of the neighborhood, while the younger ones, after assisting in disposing of the rude accompaniments of the feast, were ready for the dance, the round of country games and the repartee of flirtation. The bees were the chief social functions of country life. At these the young people met, and acquaintance laid the foundations for more lasting friendships. Individual visits among special friends and relatives were occasional but not so frequent as one might expect. Other centres of occasional meeting were the mill, the store and the chapel or meeting-house.

As autumn passed into winter, the farmers employed their time in cutting and hauling wood, taking saw logs to the mill—

once a sawmill was established—grists to be ground, corn and produce to be sold or exchanged. Timber was got out for new buildings, additional improvements were made for the farm, vehicles repaired and articles of household furniture constructed.

Before the roads were passable for wheeled vehicles and before the iron fittings for wheels were available, the universal means for conveyance, both summer and winter, was the sled. Naturally bent young tree trunks of the harder woods were carefully sought for throughout the forest to furnish the runners and knees for the sleds, while split and dried hickory saplings furnished the most durable shoes for the runners; even these, however, especially in summer, had to be frequently renewed by reason of wearing out.

Naturally the farmers in the earlier days had either to make all their own implements or to obtain assistance from one or more of their neighbors in producing the more difficult parts. Mr. Smith was evidently one of those farmers who from a combination of necessity and natural aptitude had become quite expert with their small stocks of tools. Wood being an ever present raw material, all possible implements were made of it. Even where iron was indispensable, it was used in the most limited quantity possible. Thus the plows were only shod with iron, and as even the iron was soft the plow irons had frequently to be taken to the smithy to be sharpened. All kinds of rakes were made entirely of wood, and even in the case of harrows the teeth were at first made of well-seasoned hickory pegs. Iron, of course, supplanted wood in many cases when the farmer's range of purchase was extended.

When the settlers became more numerous and communication between the settlements practicable, travelling mechanics from the United States, with or without the accompaniment of a peddler's pack, began to pass through the country, stopping here and there to make or mend implements for the farmers or supply their families with various small wares of household convenience.

On January 22nd, 1800, we find the entry, "made a rack and a shaving horse." The latter was a very useful contrivance which served as a combination of work-bench and vice. It was constructed in the shape of a long, narrow, fairly heavy

stool or bench, sometimes higher at one end than at the other. Astride of the lower or narrower end of this sat the workman, whils through an opening in the bench in front of him projected the head of a clutch swinging on a pin passing from one side to another through the body of the bench or horse. Upon a transverse piece of wood on the lower end of the clutch the operator placed his feet, and by pressing it from him, brought the head of the clutch down upon any article placed under it, thus holding it firmly upon the horse. The operator by using a stout draw-knife with a handle on each end, cut or shaved to great advantage and with considerable speed any piece of wood held under the clutch. With an axe, a saw, an auger, a chisel and a draw-knife, a man skilful in the use of tools could produce a great variety of implements and articles of household service. One of the commonest uses made of the shaving-horse was for the dressing of shingles after they were split from the blocks or sections into which the logs had been cut. The manufacture of shingles indicated quite an advance in the erecting of buildings. From 1805 we find frequent references to the making of shingles, as for instance on March 15th, 1805, and the three succeeding days, "Shaved shingles, John Wilkins and Joseph Larkin rove." Laths were prepared in the same way.

During the winter, entries in the diary show much time spent in getting out timber of various kinds, including shingle bolts, going to the mill, the store, the still and the blacksmith's shop. The dressing and winnowing of grain, washing wheat and breaking flax also occupied many days. An occasional occupation was the quarrying of stone. In 1804 we find Mr. Smith making an eye through a grind stone, after which it was set up in a frame ready for use and for the torture of his successive sons. In 1809 the diary indicates much preparation for the erection of a new frame barn to replace the log one. Much of the previous winter was spent in getting out the timbers for the frame work, drawing logs to the sawmill and bringing back lumber, preparing shingles for the roof, etc. In June, after the spring planting was over, he cut out the stone for the foundation. On July 29, he bade the neighbors to the raising bee, which occupied two days, August 1st and 2nd. With some hired assistance he had the roof on and the barn sufficiently closed in to admit of housing the harvest.

Before the War of 1812, a few persons in the new settlements were beginning to indulge in the luxury of iron stoves. These were imported from Montreal, where they were sent from the iron forges of Three Rivers. In supplementing the fireplace, for purposes of cooking and especially the baking of bread, most of the settlers built out-door ovens formed of brick clay. Thus we find an entry in the diary of August 31st, 1805, "Hauled clay and made a bottom for the oven." The following day the oven was completed. We find also that he built another oven in 1811. In 1808 a separate milkhouse was constructed. These were commonly built into the hillside, or at least partly covered with earth, in order to keep the contents cool in warm weather.

In October, 1807, he began to dig a well for the convenience of the house. Evidently this was near a spring and did not require to extend to any depth, since the work required only two days. He then selected what was known as a gum-tree, being a tree with a hollow trunk from which could be cut a section known as a gum. The commonest trees furnishing these gums were the basswood, the sycamore and the elm, the second being much the most suitable on account of the great toughness and durability of the outer rim. One of these gums was lowered into the well when dug, thus saving the earth from falling in. In 1810, he dug a new well some fifteen feet deep. This was walled up with stone. At the same time he constructed a sweep with a bucket attached for conveniently raising the water. A more primitive device was a long pole with a hook at the end of it, on which was lowered the dipping bucket. Another structure erected at this time was the corn-crib for holding the cobs of husked but unshelled corn. These cribs were commonly elevated on posts, the bottom overhanging the posts, which in later days were sometimes capped with inverted tin milk-pans, the object being to prevent corn-feeding animals, whether wild or domestic, from effecting an entrance to the granary. The body of the crib, which was sided with open-slatted wood to permit of the free circulation of air, widened from the bottom upwards and was covered with a broad roof, thus preventing the rain from drifting in upon the corn.

Hog-pens, chicken-houses and cattle-sheds were also constructed by the farmers. As time and the means at their dis-

posals extended, the furnishings of the houses were considerably increased. Thus we find them making movable bedsteads, and chairs, the bottoms of which were fitted with rushes, willows or thin strips of wood. These occasionally required mending or replacing. The making of brooms and other household articles is recorded from time to time.

The women evidently attended to the making of all garments in addition to making the cloth itself. With the opening of trade routes and the lowering of prices increasing quantities of lighter cloths were purchased from the traders. The head of the house, however, finds it his duty to make and mend the shoes of the family. When its members became more particular as to the appearance of the shoes, they are cut out by some more skilful hand but are usually sewn up at home. Thus in the earlier years we find numerous entries such as the following: "I soled my shoes all day." There are, of course, frequent references to mending the shoes of the various members of the family. In January, 1804, he goes to Joseph Howe's, a neighbor, to get a pair of shoes cut out. Like George Fox, the founder of the Quakers, our diarist believed in furnishing his growing boys with the most durable form of clothing obtainable, thus saving even the stout clothing made from the flax and wool of the farm. Thus we find the following entry for February 14, 1807, "Helped make a pair of leather trousers for David", David being his eldest son, who now appears in the record as assisting his father in many ways. Some of the farmers tanned their own leather, yet it would appear from the entries in the diary that more of them obtained leather at the store in exchange for produce.

He made many visits to Hat's store and mill at Dundas, although the nucleus of the village was not known by that name at the time. Hat conducted quite a business from the head of the Lake, sending down produce of various kinds to Kingston to be forwarded to Montreal and bringing back the usual supplies of imported goods coming within the needs or purchasing power of the settlers. The supplies obtained from the stores were primarily those which the settler could not possibly supply for himself, such as glass for windows, cutting tools, table ware, guns, with powder and shot, salt, rum, tobacco. There were also nails and hinges, scythes, bar iron, axes, hammers, saws, knives, etc. The following is a list of

actual prices paid for the leading articles of domestic or foreign produce purchased in the western part of the Niagara district, including the neighborhood of Lancaster, between 1798 and 1810. The higher prices represent as a rule the earlier years of the settlements.

Domestic Produce.

- Hay, per hundred pounds, 37½ to 50 cents.
- Oats, per bushel, 37½ cents.
- Timothy seed, per bushel, \$1.25.
- Wheat, per bushel, 75 cents to \$1.25.
- Flour, per barrel, \$4.00 during most of the period, occasionally \$5.00.
- Buckwheat, per bushel, 37½ to 62½ cents.
- Flax seed, per bushel, 75 to 87½ cents.
- Whiskey, per gallon, \$1.00.
- Potatoes, per bushel, 50 cents.
- Lake Salmon, 20 to 25 cents each.
- Salt Salmon, \$10.00 per barrel.
- Hickory nuts, per bushel, \$1.50.
- Herring, per half-barrel, \$2.25.
- Corn, per bushel, standard price 50 cents, occasionally 65 to 75 cents.
- Beef, per pound, 4 to 5 cents.
- Fresh pork, per pound, 5½ to 7 cents.
- Pickled pork, 8 to 10 cents.
- Mutton, 8 to 10 cents.
- Fowl, 12½ cents each.
- Cows, \$16.25 to \$17.50.
- Young hogs, \$1.25.

Coopered articles made in the settlement.

- Churn, \$1.25.
- Pail, 50 cents.
- Flour barrels, 40 cents each.
- Meat tub, \$1.00.
- Pork barrels, 62½ to 87 cents.

Imported Articles.

- Salt, per barrel, \$2.00 to \$3.50; per pound, 3½ cents.
- Scythes for mowing, \$2.00.
- Bar-iron, per pound, 12½ cents.

Bar-steel, per pound, 37½ cents.

Nails, per pound, 20 to 30 cents.

Tobacco, per pound, according to quality, 18½ to 25 cts.

Hats, \$4.00 to \$5.50.

Upper leather, per side, \$4.00 to \$5.50.

A pair of uppers for shoes, 62½ cents.

A pair of soles for shoes, 62½ cents.

Glass, per pane, 6" x 8", 15 to 18 cents.

Sugar, 15 cents per pound.

Tea, per pound, \$1.00 to \$1.12½.

Iron for pitchfork, 18½ cents.

Chairs, 87½ cents.

Spinning-wheels, \$5.00.

Wages.

These varied greatly, but the following are actual payments:—

A man, a boy and a pair of oxen, 1 day, \$1.00.

A man working one day in the harvest, 75 cents to \$1.00.

A boy for the same, 60 to 62½ cents.

Oxen per day without driver, 37½ cents.

For spinning 3 pounds of yarn, 32 cents.

For spinning 5 pounds of flax, \$1.56.

Making shoes for a man, 62½ cents.

Making shoes for a woman, \$1.75.

Throughout the diary we find periodical references to discharge of various public duties. Thus on March 2nd, 1801, we have the first reference to his attendance at the town meetings. These town or township meetings were established by law shortly after the passing of the Constitutional Act of 1791. Their jurisdiction was very limited, the chief local authority being vested in the justices of the peace in their Courts of Quarter Sessions for the districts. The town meetings dealt with limited local interests, such as the prescribing of the conditions under which animals were permitted to run at large. At these meetings were elected fence viewers, pound keepers, assessors, town clerks, etc. Mr. Smith served in his turn in most of these offices. There are references also to the performance of the compulsory statute labor on the roads. Occasionally he was one of the jury or board to pass upon the quality and location of the work done. We find him turning out

with others to work at the building of a school house. At that time the school was a voluntary institution, including the engagement and payment of the teachers. Considering the limited means of the settlers and the ideas of many of them as to the questionable advantages of education, we are not surprised to find that the teachers available and actually employed were very uncertain quantities.

Occasionally he was drawn to attend as a member of the Grand Jury, which met at Newark, the original capital of the Province, and after 1808 at Niagara. At first the trips to attend the Grand Jury, as for any other purpose, were made by water in open boats, which required to go ashore at night or in rough weather. He had occasional trips to York also after it became the capital, to look after matters connected with land grants for his family and others. The journey was broken at the Credit, a convenient halfway house on these trips.

In June, 1808, there was an election in that district for the member of the Legislature. Those were the days of open and prolonged voting. In this case polls were opened on the 15th and continued open until the 21st, when it was found that Mr. Levi Lewis was the successful candidate.

From 1804 on we find him attending the "training", as the Militia Service of the time was designated. Later his two sons, David and Jesse, were also in training for the defence of their country. When the troubles preceding the War of 1812 began to develop, the trainings became more numerous and when war itself was declared father and sons were called upon for active service. They were marched about throughout the Niagara District during the autumn and early winter of 1812 and again in the spring of 1813. Apparently the militia suffered much more from natural hardships and exposure to the weather than from the enemy. Smith returned from his campaigns much crippled with rheumatism. The settlers, however, were amply compensated for the hardships of the actual campaigns by the great influx of British gold, resulting in a ready market for all possible supplies at unheard of prices, as also for the services of men and animals at extravagant rates of pay.

As in the case of many of the other settlers from the United States, Mr. Smith was a Methodist in religion and very much devoted to his religious duties. Practically every Sun-

day, he went either to "meeting" or "stayed at home and read my Book." On one occasion, however, during an exceptionally wet harvest, Sunday being a fine day, he could not resist the temptation to get in his wheat. Previous to 1801 the meetings were held at the neighbors' houses, but during that year the settlers united in the erection of a modest chapel or "meeting house", as it was called. Class meetings and other special religious services still continued to be held at the settlers' homes. When anyone was present who was specially appointed to lead the services it is observed that they had "preaching", under other circumstances, some of the brethren simply "talked". There are frequent records of quarterly meetings, held apparently on Saturdays, preceded by a fast day on Friday and followed by a love feast on Sunday.

The first record of a camp meeting in the District was on August 17th, 1805, when he "went down the mountain to camp meeting", probably in the neighborhood of Dundas. Subsequently there was apparently a camp meeting every year in June at the Thirty, Forty or Fifty, which were current designations of streams in terms of their distance from Niagara. These corresponded to the present towns of Beamsville, Grimsby and Winona.

These simple annals might be extended indefinitely by drawing upon contemporary records from other parts of the province, but sufficient has been given to indicate the simple and industrious lives of the early settlers in what was then known as Upper or Western Canada. Though lacking the range of interest and of outlook of modern life, theirs was not without strenuous, romantic and even dramatic features. Under those conditions, however, they laid the foundations for our present Canadian life, and in doing so conditioned the modern Canadian social and political outlook to a far greater extent than the majority of existing Canadians realize.

ADAM SHORTT.

THE RELIGION OF ISRAEL.

The Religion of Israel, A Historical Sketch. By Henry Preserved Smith. New York: Charles Scribner's Sons, 1914. pp. 369. \$2.50.

When the writer of this review came to Queen's University, about fifteen years ago, there was no satisfactory literature on this subject, in English, for the use of theological students; nothing corresponding, e.g., to that excellent German textbook Marti's *Geschichte des Israelitischen Religion*. Contributions began to appear (Robertson Smith's *Religion of the Semites*, 1889) about that time and now the bibliography of the subject is varied and extensive. The writer of the volume that now lies before us is one of the men who have suffered in the cause of Biblical criticism. Dr. C. A. Briggs was in 1903 compelled to leave the Presbyterian Church, and soon after Dr. H. P. Smith met the same fate. Thus the General Assembly of the Church of North America, in spite of almost a quarter of century of progress, followed the example of the Free Church of Scotland in the Robertson Smith case. Recently Dr. Briggs passed away respected and honoured by all who were capable of judging the quality of his work; whatever personal limitations he may have had, he rendered noble service, at a critical period, to Old Testament scholarship. Dr. H. P. Smith now holds a position in connection with the Library of Union Seminary. He has just given to the world this book on *The Religion of Israel* which we can cordially recommend to all who have the slightest interest in this important subject. It is a book suitable not only for special students of the Old Testament but for all intelligent readers who believe that some acquaintance with the historical movements is necessary to enable us to understand the debt that we owe to the past.

With an independent examination of particular problems this book stands squarely on the broad results of Old Testament criticism that are accepted by the great body of scholars of the leading nations and the different churches. Incidentally the preacher may gain many hints concerning the historical

study and scientific exposition of the different types of the literature. The author had a fine equipment for his work as the volume is the result of life-long study on the part of one who is thoroughly acquainted with Hebrew literature, and the best scholarly contributions of the present and past generations. His work on the text of the books of Samuel and his Old Testament history showed what might be expected when he came to constructive work of this kind. There is no ostentatious show of scholarship, and no room for elaborate discussion, but the whole ground is carefully covered and the results given in a clear positive fashion. It is an outline of the development of Israel's religion from the period when the Hebrews came into Palestine, through more than twelve centuries of change and progress, down to the time when the temple at Jerusalem was destroyed by the Romans. The treatment is reverent and sympathetic but not directly apologetic. It is a problem of history and not of philosophy or theology with which the author has undertaken to deal.

The following brief summary, in Dr. Smith's own words, will indicate clearly the position represented by the book. Of course, such a bald statement cannot do justice to the rich content of the movement; an appreciation of that can come only from a study of the literature under competent guidance. "Briefly reviewing the ground that we have gone over, we may recall to mind that when the Israelites first came into the light of history they were a group of nomad clans with a religion like that of other dwellers of the desert. Their God, Yahweh, was apparently the local divinity of Kadesh, who was made party to a coalition of the social groups in that region. The success of the coalition led to the invasion of Canaan and the gradual settlement of the country by the immigrants. In Canaan the God took on the features of an agricultural divinity, receiving the first-fruits and tithes of the soil. The attempt of Ahab to introduce the worship of the Phoenician Baal led to a reaction under the powerful personality of Elijah. The prophetic party thus beginning its career was prompted by a desire for social justice as well as for religious simplicity. In some centuries of conflict this party clarified its aims and at last preached an ethical monotheism for Israel. This monotheism would not have triumphed (humanly speaking) had it not been for the exile. In the exile the people found the bond

which held them together to be that of religion. They therefore became a church rather than a nation, conscious of possessing a unique treasure in the traditions of Moses and the Prophets, carefully avoiding amalgamation with those of different faith."

This of course is a mere summary, but in the book it is expanded and enriched by statements concerning the character of the literature and expositions of the theology in these various stages. Particularly suggestive is the treatment of The Development of the Messianic Hope, and The Treasure of the Humble (The Psalter). One has pleasure in recommending a book which presents within reasonable limits such a satisfactory review of a great subject.

W. G. JORDAN.

CURRENT EVENTS.

THE UNITED KINGDOM.

The Present Situation.

The writer responsible for these notes in the April number of the Quarterly was forced to close on a note of uncertainty, writing as he did in the very midst of the storm aroused at the latter end of March by the Curragh incident. Since then the storm has passed and the air is considerably clearer. Out of all the hurly-burly of furious denunciation and hardly less furious rebuttal at least three things have become clear. First, that the "army crisis" has passed, and that the danger of an appeal to the country on the gravest issue that perhaps any nation can face within its borders, that of "army against people" is now no longer to be feared. Secondly, that the country as a whole is apathetic with regard to Ulster, and that neither Tory cries of "pogrom" nor ministerialist shouts of "treason" are shaking the great mass of English electors to any appreciable degree, the inference being that most of the sound and fury of the battle are manufactured in Parliament and the Press. Thirdly, that the Liberal government has not yet received its death blow. That this is so cannot be due to anything else than the masterly handling of the situation by Mr. Asquith, the ineptitude of the Opposition in playing cards which in the hands of skilful players would have proved irresistible, and, perhaps more than any other reason, the grim determination of the ministerialist coalition to remain in office at any hazard until the three great measures of Home Rule, Welsh Disestablishment and Plural Voting are safely on the Statute Book.

The Course of Events.

To outline very briefly the course of events since the beginning of April, we may remind our readers of the resignations of Colonel Seely, Sir John French and General Ewart, following the repudiation by the Cabinet of the Gough Treaty. There can be no doubt that the fate of the government trem-

bled in the balance, but once again we have the situation saved by the consummate statesmanship of Mr. Asquith, in the dramatic announcement that he had decided to assume the office of Secretary of State for War himself, the only man who could do it.

And then came the revelation of the stupendous "plot". Never since the days of the late lamented Rev. Titus Oates has there been such a plot. The blood-curdling details of this terrific affair were given to the world by the Standing Committee of the Ulster Unionist Council, and bore every evidence of artistic workmanship in its composition. The burden of the revelations made was that Sir Arthur Paget had communicated to his officers in Ireland "a plan of active operations" against Ulster, the plan to consist of the adequate guarding of the five depots in the Province, and the occupation of bridges and strategic points along the line of the Boyne. In addition to this the blockade by land was to be strengthened by a still more rigorous blockade by sea, and a battle squadron and smaller ships were to co-operate with the land forces. So far this *communique* had told nothing very new, as all the world knew of the proposed movements of troops and warships in the neighborhood of Ulster. But it was when the Ulster council came to describing the plan of campaign that our blood began to run cold. Sir Arthur is credited with the announcement to his officers that the idea was to force the Volunteers to strike the first blow, and in order to provoke an outbreak the Belfast police were to seize some of the secret depots of the rebels, and also take possession of the headquarters of the Ulster organization, the old Belfast Town Hall. When the Ulstermen had risen to regain their property, the military would appear on the scene and the second St. Bartholomew would begin. The cavalry were to be kept out of it, in deference to their known political leanings, and for fear of mutiny, but as a sop one regiment was to be allowed to dragoon the Nationalists in Cork, where a little rioting was to be got up by special arrangement. Another most subtle touch was to be the massacring by a frenzied Belfast mob of a unit of fifty soldiers of the Dorset Regiment, which were to be left in Belfast to guard the barracks while the main body was moved away. Earl Percy is responsible for this masterpiece in the National Review.

It is not too much to say that England stood aghast. Were one word of this accusation true the words of Mr. Churchill would have been none too strong, such a thing would be "hellish". But it was unbelievable. The British public was asked to believe that a party of about a dozen very ordinary Englishmen, called the Cabinet, with so far a reputation for pacificatory intentions to most things in general, had deliberately planned murder on the grand scale, with a perfectly diabolical regard for details. The whole thing fell flat for the very reason that perfervid Ulstermen could not have anticipated. The British nation as a whole has at least a small sense of humor, but that sense seems lacking to a Belfast Orangeman. The Englishman, unless blinded by that partisan hatred which makes the writers of the *National Review* so psychologically interesting, simply couldn't swallow such a story, and the wonderful and blood-curdling plot fizzled out. Of course the Opposition did their best with it, but it was hard work. It led to several nasty little scenes in the House, among which we may note the calling of the prime minister a liar by the leader of the Opposition, an incident unique in the annals of Parliament, but of course Mr. Bonar Law is unique as a leader of a great party.

Since then we have had the renewed attempts which were made at a satisfactory arrangement by consent through the medium of conferences between Mr. Asquith, Mr. Bonar Law and Sir Edward Carson; the somewhat unfortunate proposal of Mr. Churchill for a settlement along federal lines which was promptly repudiated in the name of the Cabinet by Mr. Asquith, and lastly we have had the astonishing coup of the gun-running on the Ulster coast.

The Gun Running Incident.

In this matter we are much in the dark concerning the policy of the government. Either one of two things happened, the War Office was warned from its secret service men in Ulster of the approaching attempt and deliberately held its hand; or the War Office did not believe the warnings sent and let the guns slip through by mere negligence.

The second alternative is almost inconceivable, and if the truth lies with the first, there must of necessity be a settled policy at the War Office of which the public knows nothing,

based on information of a character which no one outside official circles can guess at. In corroboration of this second view it may be remembered that the deputation headed by Mr. Neil Primrose which called on the Prime Minister to take active measures in punishing the offenders was received in private by Mr. Asquith, who, it is reported, indicated to them certain reasons for the policy he has pursued, namely that of non-interference in such fragrant breaches of the law.

The Nationalist Volunteers.

And now we have the Nationalist Volunteers, of whom it is rather hard to tell whether Mr. Redmond has blessed them or cursed them. These braves are at present quite an unknown quantity. We hear of gun runnings to be arranged, and of a hundred thousand trained men; one hundred thousand is a good round number, and may conceivably indicate an ideal approximation rather than the exact numbers on the roster.

We are not told where the money is coming from to finance this latest portent, but we suppose America as usual. Perhaps the pay will not be as high as in Ulster, where patriotic English Tories pay the piper at the rate of a dollar a day ("bloomin' good pay, a dollar a day" as doubtless our Laureate of Empire says).

The Amending Bill.

We do not appear to be any nearer a settlement, unless we accept Mr. T. P. O'Connor's view that the turning of Ireland from north to south into a powder mine conduces to peace, and now the Home Rule Bill is in the Lords and Lord Crewe has let us know what the terms of the wonderful Amending Bill are to be. But we knew them all before, liberty given to Ulster to exclude herself for six years by popular vote. We may at least take some comfort from knowing that now the government have laid all their cards on the table, and now the Opposition faces the task of framing an alternative proposition, presumably permanent exclusion for the whole province. If matters then come to a deadlock, the Home Rule Bill passes automatically into law, and Ireland rushes into Civil war, what then? British troops will have to be requisitioned to stop the Ulster Volunteers from fighting the Nationalist Volunteers, which is practically the same as asking

them to fight them both. Our friends at the Curragh will then be confronted with the heartrending dilemma as to whether their consciences will allow them to fire on the Nationalists and not on the Ulstermen, which will doubtless afford a priceless opportunity for the exercise of a little casuistry.

In speaking of the Amending Bill we may at least note the little incident in the House of Commons, when the Tory impatience to hear the proposals of the government led to a riot. Most undoubtedly the opposition was intensely disappointed, perhaps not unjustly at not being able to draw Mr. Asquith.

It may be said that there was a measure of truth in Lord Robert Cecil's accusation that it was farcical to ask the House to pass the Home Rule Bill without telling it how it was proposed to amend it. Mr. Bonar Law's assertion, which was doubtless true, that it was useless to discuss the Bill further, was certainly acted upon literally by his supporters who made all further proceedings impossible. Such scenes stimulate our recollections of those far off days when such undiluted scorn was poured upon the "vulgarity" (maiden aunts, dowagers, country vicars and retired army officers used the word with unction) upon the unparalleled vulgarity, ungentlemanly conduct, and generally low state of mind of those dreadful Nationalists who dared to make little rows in the House of Commons, and those were really very little rows they used to make, too. But times have changed. The House of Commons has been democratized by the admission of the labour members, and Parliament has lost its manners. Of course it is merely an avoidance of the issue to point out that the Labour Party never makes a disturbance, and behaves with perfect dignity and respect toward Parliamentary amenities.

The Budget.

How strange it is to find a revolt against the Budget proposals being led by Liberal members, while the Opposition is hardly more than plaintive in its protests.

Mr. Lloyd George's first proposals were to meet an expected deficit of £9,800,000 in a Budget of £210,455,000 by raising five and a half millions more from the income tax on incomes of £1000 and over; two and a half millions by making the Supertax more searching in its incidence; another eight hun-

dred thousand out of the Death Duties, and a million from the Sinking Fund.

The trouble started from a group of rich Liberal members, of the Brunner, Mond type, who objected to having the plutocrats paying another two and a half millions for more or less undecided objects, vaguely outlined as relief of local rates, education and public health.

Mr. Lloyd George promptly surrendered, dropped a penny off the Income Tax and abandoned his scheme for grants to local authorities. No sooner had he done this than trouble began in another direction, a group of Liberals threatening to vote against the government if the grants in relief of the local taxpayer were sacrificed at the behest of the Plutocrats. To add to Mr. Lloyd George's difficulties, the Labour members announced their intention of refusing to support the Government, because no relief was to be given to the poor man in the shape of lower duties on tea and sugar, and as a last culminating disaster the inevitable Mr. Tim Healy announced the intention of the "All for William" Party of voting against the Budget on general principles. All of which goes to show that wigs of various pattern and make are on the Liberal green.

But where are the convincing, unanswerable statistics proving the inevitable ruin of the country that greeted the first great Lloyd-Georgian Budget? *Tempora mutantur*, and the Times in its leading article on the Chancellor's presentation of his proposals was not indignant, merely pained in a dignified manner. Is it really the same Times that in 1910 thundered and lightened over the spoliation of the "oppressed classes" (by which pathetic title the Conservatives called the plutocracy), that in 1914 says, "we have no objection to the principle that the rich should pay for the poor, moreover we regard the method of differential taxation as an extremely powerful instrument for redressing the inequalities of fortune, which no one can regard as desirable"?

Can England pay such taxes? She can pull down her barns and build greater ones, she can transform London in less than a generation from the grimy city that Dickens knew to a city of palaces and giant hotels, rivalling each other in their marble courts and gorgeous halls; she can fill her roads with great gliding automobiles which cost nine cents a mile to run, and

so the odds are largely in favour of her being able to meet the demands of the Budget.

The Situation in the Constituencies.

In speaking of the immediate political situation in England, it remains to justify our first statement, namely, that there has been no decided movement away from the government under the stimulus of the Ulster crisis. Since the beginning of all the bother, there have been three by-elections in constituencies held respectively by a Liberal, a Labour Member and a Conservative.

The first to poll was Grimsby, the election being necessitated by the death of Sir George Doughty, the Conservative member. An analysis of the votes cast shows that the Unionist majority dropped by 420, a result of course easily accountable by the personal popularity of the late member. In North East Derbyshire the split between Liberals and Labour made a present of the seat to the Unionists, who won it, although in a minority of over three thousand votes. The heaviest Liberal defeat was of course at Ipswich where Mr. Masterman was defeated, a Unionist minority of 344 being turned into a majority of 532, although it may be mentioned that a socialist candidate polled 395 votes, the Unionist majority over both being therefore 137.

However, on a little closer inspection a very curious result is found. In the three constituencies the Unionists have polled 1808 more votes than they did in 1910, while in the same three the Liberals have polled 3452 more votes than their previous record, and yet the Liberals lose two seats. It cannot be denied that the loss of the seats, more particularly Ipswich, where Mr. Masterman met his second defeat since entering the Cabinet, is a heavy blow to the Liberal government, and yet the figures prove most conclusively that there all the efforts of the Unionists to harrow the feelings of the electors by wild tales of plots and "pogroms" have fallen flat, and the Liberals are left to console themselves with what comfort they can draw from these great "moral victories", which are the coldest kind of victories he ever knew, according to Mr. Chamberlain.

The Murray Inquiry.

We wonder whether we have really heard the end of the great Marconi scandals, with Lord Murray acquitted and Mr. Fenner in temporary retirement. The result of the Lords' inquiry into the charges brought against Lord Murray by the Morning Post and the National Review is an exoneration of the former Liberal Whip of all dishonourable imputations, coupled with a mild rebuke on the score of lack of wisdom in such transactions. Of course the National Review, still in the role of the political fat boy, promises to make our flesh creep yet again, but it is a chastened and sorrowful Mr. Maxse who comments on the verdict in the June number. Every Unionist, he says, must regret the result of the inquiry. Regret what? we may ask. That a man has been proved innocent of some of the most damning accusations ever brought against a public man? If Mr. Maxse is sincere in his desire for "clean government" surely he must rejoice that the hands of the Liberal government are cleaner than he feared, (or shall we say hoped?) But we will leave it at that. Mr. Maxse is suffering from what psychologists call the "fixed idea" that every Liberal must be a knave from the very nature of things, which must be a very comforting and blessed thought to all patriots such as he.

The Future.

We cannot doubt that the days of the Liberal government are numbered. That at the next election they should be returned can hardly be credible. The Marconi business was a staggering blow, and the Unionists, as was their right, made every possible use of the advantage it gave them. The Liberal Party has a wonderful recuperative power, and the Tories bungle their attack oftentimes, and yet the Ministry is slipping surely down a decline to destruction. That at the next election the Liberals should go out of power, and take the role of a strong and vigorous opposition for some years will be undoubtedly far from a bad thing. Then we shall have had to thank them for nine most stimulating years, years full of legislative triumphs, full of progress, of reform and of victory.

H. MICHELL.

CANADA.

THE TEST OF EMPIRE.

The coming of a shipload of Hindus to Canada to test deliberately our policy of Oriental exclusion, has brought the theory of empire in conflict with the facts sooner than most of us anticipated. Those who have engineered the present expedition are absolutely sound in their logic: if the British Empire is an empire and is one, all its citizens must have the right to pass from one part of its dominions to another. The fact is that it is not an empire and is not a unity. There are two ways out. Either we can bend the fact to fit the form, set up a central parliament with imperial and unifying powers over all the parts, with power, for example, to override Australian or South African or Canadian "prejudices" against Asiatic immigration. Few among the most ardent imperialists will contend that such a solution is practical politics now, at least, and it is now that the solution must be found. Or we can bend the form to fit the fact, recognize explicitly the realities which changing time has wrought, recognize that the great Dominions are partners, not subjects, independent allies of the United Kingdom under a common king. When this is explicitly recognized, and not till then, will the United Kingdom as trustee for the people of India be able to avoid responsibility for actions which it has no longer the power to control. The incident proves again most conclusively that absolute autonomy is the only basis of enduring connection.

So far as the immediate situation is concerned, the Dominion Government will doubtless do all in its power to lessen the dangers of unrest in India. Yet it cannot sacrifice the welfare of the Dominion to the word-plays of formalists. Canada must be kept a white country, even if new definitions of Empire have to be framed. Possibly an arrangement might be made with the Government of India, and with the government of China as well, similar to that concluded with Japan, setting by agreement a maximum number of incomes per year—which might be made to apply also to Canadians going to Asiatic countries. In this way something would be done to save the face of the authorities in the east, while securing all essential safeguards here.

THE BUSINESS SITUATION.

The spring has failed to bring the revival of business which winter prophets hoped for. Railway earnings continue to fall, new floatations are far between, manufacturers mark time, strikes are discreetly few, immigration is cut in half. Our neighbors,—the rest of this sometimes inconveniently close-bound little world—feel with us the burden of wasted Balkan millions and the shadow of disturbances to come. The world-wide slackening of industry and more particularly of financial activity may be in large part ‘psychological’, in President Wilson’s phrase, may be but a nervous reaction after long prosperity, but it is non the less real for being labelled.

In Canada, the reaction has been especially severe for reasons plain at least to hindsight. Our prosperity was unparalleled, the advance in values uniquely sudden and extreme, so that we had farther to fall than most. Much of the capital and effort invested in Canada in the past decade has gone into undertakings, necessary it may be, and eventually sound, but not immediately fully productive, into the building of railways to open up new lands, into the building of cities and of city-centred commercial and financial enterprises planned to deal in the products of the new lands. The temporary activity of this construction period set abnormal standards of employment, of profits, of values. We are now entered upon the transition period, passing from the somewhat fictitious prosperity based upon borrowings from without to the more solid prosperity of home production. Time will be required for realities to catch up with the optimistic dreams of yesterday, but catch up they doubtless will. Dr. Adam Shortt has recently pointed out the close parallel between the present period and the era of readjustment in the Canada of the fifties, after our first orgy of railway building and accompanying speculation. Fortunately the Canada of today is a bigger land, with broader and more diversified interests, a sounder banking system, and a better established place both in foreign repute and in our own confidence. The readjustment has therefore been gradual, without crash or panic. The halt in our advancement has been only temporary, and if it will teach us the necessity of encouraging the primary pro-

ducer, and of curbing the frenzied financiers, it will not have come upon us in vain.

THE CANADIAN NORTHERN.

The most serious episode in this process of readjustment has been the financial embarrassment of the Canadian Northern, and its appeal to the Dominion Government for further and possibly final aid. Both political parties have sought to deny responsibility for the present situation. The government throws it upon the Opposition, in that it sanctioned the transcontinental ambitions of the C. N. R. just before the general elections of 1911, when the Port Arthur-Montreal branch was given a federal subsidy. The Opposition retort that the present difficulties are the outcome of the premature British Columbia extension into which some \$60,000,000 have been poured, an extension which the Laurier government persistently declined to aid or recognize, and which was taken up by the Pacific province, and by the present Dominion administration in 1912 and again in 1913. Responsibility seems to be still further shifted in an incidental remark of the general counsel of the C.N.R. before the Railway Commission: "Across the Fraser Canyon you see the Canadian Northern working along what is probably the most difficult place where God ever permitted man to build a railway".

Was a Third Transcontinental Needed?

Under Providence, however, where does the responsibility lie? Is the present embarrassment merely an undeserved and unforeseen consequence of world-wide scarcity of capital, or is it due to more deep-rooted errors?

In the first place, was it advisable to build two competitors with the C. P. R.? So far as the west is concerned, from the lakes to the Rockies, there is no room for question as to the services the Canadian Northern has rendered. It opened up the great Saskatchewan Valley, threw out branch lines in the northern sections of all the prairie provinces, and wakened the C. P. R. to the need of similar expansion; it added a very valuable spout to the funnel, by its line from Winnipeg to Port Arthur, and in its early days forced down Western rates. At the same time there is no question of the service rendered by the Grand Trunk in the East. As

was pointed out in the review of Grand Trunk Pacific development in the last Quarterly, the most desirable outcome would have been a junction of forces between these two roads, a working arrangement which would have made the Grand Trunk the eastern, and the Canadian Northern, the western end of a great system, with possibly a joint or government line north of Lake Superior. A working arrangement was proposed by the Canadian Northern, but rejected by the Grand Trunk. In 1903 there was no comparison in public estimation or in financial resources between the old if somewhat water-logged company, under vigorous new management, and the aggressive but as yet only locally familiar road of some half dozen years' standing. Having to choose, the government of the day had no hesitation in giving its recognition and its aid to the older company. Messrs. Mackenzie and Mann seemed to halt for a time in their ambitious plans, but only for a time. Soon the campaign for a third, or as the Canadian Northern prefers to say, the second of three, transcontinentals was in full swing.

The possibility of having too many railroads has appeared remote to this present generation. The individual farmer could see that it would not pay to give up too much of his land to lanes or put more than a certain fraction of his capital into waggons; the individual manufacturer could see that there were definite limits to the provision of trucks and elevators and travelling cranes advisable in his establishment, but it has been harder for us to see as a nation that if we put too big a fraction of our capital, saved or borrowed, into railways, they became a liability and not an asset. Capitalists may be willing to lend us money, contractors may be willing to build a road, constituencies may demand the plunge, but the bills will come in some day. It is not a question upon which certainty can be reached in advance. Estimates as to cost, as to growth of population and of traffic, and as to channels of trade, are subject to a large margin of error. Still, a rough estimate can be framed, comparisons can be made with other sections, experimenting and tentative expansion can go steadily on. Provided that the men who build the road are finding the capital themselves, a constant check as well as constant stimulus is present; but where the country finds the money

and contractors' wishes are powerful, this salutary check is greatly weakened.

Mr. Oliver has suggested an interesting comparison: "there are today three railways from Chicago by way of St. Paul to Puget Sound—the Northern Pacific, the Great Northern and the Chicago Milwaukee and Puget Sound—passing through a territory absolutely similar to that in our country, between Winnipeg and the coast, absolutely similar and of like extent, and these three railways find great business, large traffic and satisfactory profits from the carrying of freight and passengers through the tier of states that lie alongside the Canadian boundary." True, but this tier of states contains over ten million people as against the two million in Canada west of North Bay—which is a fairer starting point than Winnipeg. Taking into account all the lesser roads, the comparison is more favorable; Western Canada has some 15,000 miles of road to serve 2,000,000 people, the north western states some 45,000 miles for their 10,000,000—a not unreasonable relation excess, in view of coming growth.

The proof of the profit, however, is the dividend. Until very recently, the Canadian Northern, for example, has been remarkably successful in meeting its obligations. The prairie lines were for the most part strategically located, cheaply built, and economically operated, and they have paid their way every year since the beginning of construction in 1896. Then came the less profitable sections: the eastward extension, from Port Arthur to Montreal, opens up some new territory of value, but cost much more to build and must for many years have much less local traffic; still more is this the case with the British Columbia extension, much more expensive in construction and paralleling the Grand Trunk Pacific from Edmonton to Yellowhead Pass and the Canadian Pacific from Vancouver to Kamloops. As a result of this expansion, Canadian Northern finances are in less fortunate shape than they were. In the year ending June 30, 1913, the gross earnings of the Canadian Northern proper, (Port Arthur to Edmonton), were, in millions of dollars, 24.5; operating expenses, 17.5; net earnings, 7.0; fixed charges and interest on income charge debenture stocks, 6.1, leaving a net surplus of \$844,000. For the whole Canadian Northern system in the same year, the gross earnings were 31.8; operating expenses, 23.3; net earn-

ings, 8.4; fixed charges and interest on income charge debenture stock, 8.2; leaving a net surplus of \$260,000. That is, on the Canadian Northern proper the earnings gave a surplus of \$844,000 above charges, on the rest of the system a deficit of \$584,000, and on the system as a whole a surplus of \$260,000. The current year sees this margin vanish. Figures as to the whole system are not available, but as far as the Canadian Northern proper is concerned, gross earnings will probably be about the same as last year, (having increased the first half and fallen off sharply the second half), net earnings will be a quarter million more, while to judge from the data laid before parliament, fixed charges will be very greatly increased. For the whole system, according to the government auditors, securities had been issued up to December 31, 1913, involving fixed charges of \$12,927,000: in the previous railway year, earnings available to meet these charges totalled only \$8,461,000. Allowance must of course, be made for the fact that much of the line for which these charges were incurred is still under construction and bringing in no return, and that many sections which are completed are isolated and may be expected to bring in more when the road is linked up from coast to coast. Mr. D. B. Hanna, third vice-president, estimates that by 1916, when the whole road will be in operation, gross earnings will be 54 millions; operating expenses, 38.8; net earnings, 15.1; fixed charges, including interest on securities just authorized and interest on income charge debenture stock, 13.8; leaving a net surplus of \$1,262,000. That may be—if business improves sufficiently to increase gross earnings a mere sixty or seventy per cent in two years. And this includes no return upon the \$100,000,000 of capital stock recently stamped by parliament as paid up and entitled to dividends.

How does this concern the public? It concerns every Canadian taxpayer, since the Dominion and five of the nine provinces have guaranteed earnings on nearly \$200,000,000 of the capital invested, exclusive of the recent \$45,000,000 endorsement. Further, it concerns every Canadian shipper and producer in the area served. Does competition always lower rates? If the railway RCommission takes the stand for which previous decisions have given some color, and which counsel for the weaker roads have urged, that freight and passenger

rates must not be lowered below the level necessary to pay a reasonable return upon invested capital, subject only to whatever influence water competition or American railway competition may effect, the figures given above do not hold out much hope of sweeping reductions. Rates must be kept sufficiently high to enable the weakest road to make ends meet, leaving a large surplus for the richer roads. In the recent western rates case before the Railway Commission, counsel for both the C. N. R. and the G. T. P. protested that they could not stand the low rates on which the C. P. R. would thrive. The argument of the C. N. R. counsel, extracts from which were put upon Hansard by the member for Kingston as affording the basis of his opposition to the government proposals, frankly urged that all the public aid given the Canadian Pacific should be considered a gift to the shareholders and not a fund to draw upon to reduce rates. Such is the extraordinary result of unchecked "competition".

Napoleon once urged men to think in continents; Canadians in railway matters think too much in transcontinental terms. The United States, with its hundred million people, and all its wealth of promoters and high financiers, has not a single railway running from ocean to ocean; it has great systems running from the lakes to the Pacific, and great systems which confine themselves to the region between the lakes and the mountains and find good profit there. The chief ground for the coast to coast expansion of our roads has of course been political, the desire to bind the long-drawn out provinces in links of steel. This consideration had rightly great weight in the building and subsidizing of the Canadian Pacific, which opened up the Northwest and clamped British Columbia to the east. It had less weight when the Grand Trunk Pacific project was launched, though the national benefit of opening up the central north and giving Canada breadth as well as length amply justified that enterprise. The political desirability of still a third complete link, the national service it would render, doubtless existed, but in rapidly diminishing degree: the case for a third transcontinental must rest mainly on its economic necessity. Yet, if that necessity still remains to be proved, where precedent and ambition urged, where sectional interests demanded, where generous politicians were ready to co-operate, and when the tide of confidence

among Canadian business men and British investors was at the full, the decision of the promoters of the Canadian Northern to endeavor not only to expand in the east and to link up its prairie and its eastern sections, but to build to the Pacific is easily understood. If mistakes were made, they had their parallel in private business enterprises, their sanction in the optimism which pervaded the whole country.

Finance and Control.

This tremendous undertaking determined upon, how was it to be carried through ? The methods adopted were striking. In the first place, the state was looked to for the main financial support. Land grants were secured or acquired, cash subsidies of over \$35,000,000 were obtained, but the special Canadian Northern form of public aid was the form adopted in 1849 in our earliest experience with railway politics, the public guarantee of bonds. There was much to be said in favor of this form, provided the undertaking had reasonable promise of success and public credit was not strained. Every province from Ontario to the Pacific guaranteed the bonds of some part of the system, about \$133,000,000 in all thus far, while the Dominion gave its backing for some \$60,000,000. Thus endorsed, the bonds were placed in London with little difficulty. Next, whatever further capital was required was raised entirely by selling bonds, not publicly guaranteed, but secured on special sections of the system: not a cent of stock, common or preferred was sold. The money that built the road was put in entirely by its creditors: none by shareholders or proprietors. Finally, the promoters planned to secure control and the equity of the whole system, by issuing to themselves, for services, not for cash, the common stock of the main line and in large part of the subsidiary and allied companies.

This plan, in its full extent, stands unparalleled in railway annals. Governments have given lavish aid, promoters have built roads entirely out of the proceeds of bonds or subsidies, financiers have dominated great railroads by a majority or controlling interest in the stock. Never before did two men plan to unite all three arrangements, on such a scale, to build ten thousand miles of road without putting in a cent and still remain in absolute control by retaining every dollar of the

stock. It took genius and courage of the first order to plan this scheme and to carry it through. Some have called it nerve, but the phrase is petty and unworthy the occasion: in transactions on such a colossal scale, courage, audacity, are the only fit expressions. And the majority of Canadians, even while uncertain whether they were the partners or the victims of the undertaking, could not repress a feeling of reflected pride in having evolved such resolute and able financiers.

The plan, of course had its dangers, both to promoter and to public. It meant that there was no large committment of proprietors' capital, to secure support in difficulty and compel responsibility in management. Mr. Borden went to the root of the matter in his recent statement: "I am free to confess that I think it would have been better, when the idea of that enterprise became fixed in the minds of Sir William Mackenzie and Sir Donald Mann, if they, by means of their large holdings of common stocks and by their almost sole proprietorship of the enterprise, had seen fit in years gone by to associate themselves with large financial interests which, I think, could have been brought into the enterprise, so that the condition which confronts the country at this time might not have been before us today. I am saying no more here in Parliament than I have said in terms even franker than those I used here, to both Sir William Mackenzie and Sir Donald Mann." It meant that with all the cash capital taking the form of bonds, any failure to make ends meet, any period of depression, would bring risk of the mortgage holder's foreclosure and receivership, not merely a shareholder's waiting for a turn of the tide. It meant that the control of the vast enterprise was in the hands of a few men, unchecked by public inquiry or independent shareholder criticism. One incident of this situation was the power of the directors to grant themselves or allied interests contracts for construction. We are told that Mackenzie and Mann, Limited, was only the construction department of the Canadian Northern, making arrangements for building and letting the road pay the bills, and that this firm never received a cent of profit from construction. In view of the wide belief to the contrary, it would be desirable to have the matter definitely settled by full statements from the men directly concerned or by parliamentary investigation. If

Sir William Mackenzie and Sir Donald Mann never received a cent of profit or salary from the Canadian Northern except the contingent worth of the common stock they owe it to themselves to make this clear beyond dispute, and if they do so, unstinted admiration for their faith will take the place of doubt now prevalent.

The Present Difficulties.

No serious snags were struck until this past year. Then the rise in labor costs, the engineering difficulties of the mountain section, and the stringency of money in the world's markets, brought embarrassment. Aid was sought from the Dominion Government. Money was needed to pay contractors and dealers in supplies for services and goods already rendered. Money was needed for future development, to complete and equip the road. And possibly quite as urgent, in view of the approaching failure to make ends meet any longer, was the need to get the Dominion more firmly committed to the support of the enterprise, for the relief both of lavish provincial endorsers and of the interests in control.

The government was faced with a difficult task. 'The baby was on the doorstep,' wherever it came from. The government could not withhold aid, it was urged, in the present strained financial situation of the country, without precipitating a crash.—When business is booming, who cares for a few million? When business is depressed, better a few million more than a smash: so the millions flow, rain or shine.—Careful consideration was given by the Cabinet, inquiry into the financial relations of the company was made, and elaborately framed provisions for relief eventually brought down. The discussion in parliament was able and protracted. The outstanding features of the debate were, on the one hand, the capacity displayed by the Solicitor-General, who who charge of the bill, and who showed a grasp of complicated detail and a power of lucid explanation markedly unusual, and, on the other, the independence of the members from Calgary, Kingston, and Norfolk. Quite aside from the merits of the careful arguments submitted, public opinion widely welcomed their courage in rising above party consideration on a question of vital importance, but not involving party principles.

The government plan provided in brief for granting a further guarantee of \$45,000,000; stipulating that certain floating

liabilities and temporary loans should be otherwise met; giving the Canadian Northern proper possession of practically all the stock of the subsidiary companies; fixing the capitalization of the parent road at \$125,000,000; allocating \$60,000,000 of this to Mackenzie and Mann, \$40,000,000 to the Dominion, and \$25,000,000 to be held in trust for conversion; securing the appointment of one government director on the board, and providing for exchange of running rights between the C. N. R. and the government railways.

How far did this meet the varied demands of the situation? The first necessity was the completion of the road; wherever the responsibility rests, the enterprise has gone so far that to stop now would be tremendous waste. This, according to the Company's present claims, is secured by the issue of \$45,000,000 thus guaranteed. The second necessity was to obtain security for any assistance or endorsement granted. This was done, so far as the heavily mortgaged road itself afforded any basis for additional security; in addition, the equity in certain western townsites, of problematical value, was pledged. It would have been only reasonable to demand that this security should be strengthened by the personal endorsement of the multi-millionaire partner-owners. The third necessity was to avoid incurring any responsibility or obligation beyond the present aid. So far as each favor strengthens the precedents for further aid, some increase in responsibility could hardly be avoided, in whatever form the aid was given, but by accepting a partnership in the whole system, in acquiring an additional \$33,000,000 common stock, the government committed itself to out and out responsibility for past and future operations. As a partner, the Dominion will find it hard to refuse to stand under whatever load may be necessary to carry. A fourth point of importance was to avoid giving any sanction to watered stock. Of the parent company, some \$77,000,000 stock had previously been issued, \$7,000,000 in the hands of the government, \$45,000,000 belonging to Mackenzie and Mann, and \$25,000,000 held in trust for exchange for income charge debenture stock in 1916, if the holders of the latter so desired; of allied and subsidiary companies, some \$81,000,000 had been issued, some owned by the parent company, some by Mackenzie and Mann—in exactly what proportions is not made clear. Under the new arrangement the stock of the subsidiary companies is left as it was,

the stock of the parent company is increased by \$33,000,000 assigned to the government and \$15,000,000 assigned Mackenzie and Mann, but the whole of the stock of the subsidiary companies is put into the treasury of the Canadian Northern proper. Omitting in both cases the \$25,000,000 held in trust, and disregarding the fact that a certain or rather uncertain amount of the stock of the subsidiary companies was already in the treasury of the parent company, the \$133,000,000 on which dividends might have been claimed is reduced to \$100,000,000. Four quarts of water have been boiled down to three, and in virtue of the greater strength and thickness resulting, have been certified by parliament as paid up and entitled to receive any dividend which may be earned. Of course the exact amount of water there was in the holdings of Mackenzie and Mann depends in part upon the decision as to the degree of return otherwise secured for their services. And undoubtedly the government will have it in its power to use its \$40,000,000 only for control—or for being held responsible—instead of for dividends. A fifth consideration was the desirability of introducing independent and responsible financial interests into a share in the control. This, is, however, hardly a task for a government to effect, and the present time was not the most propitious. A sixth point was provision for greater publicity. So far as the past was concerned, something was done by the investigation of the government auditors, though a full parliamentary inquiry might well have been instituted later. For the future, some gain comes in the stipulation that annual reports must be filed—presumably more detailed than those already required by the Railway Act—and in the presence of a government director on the board. Finally, the arrangement as to exchange of running rights is certainly not a concession to the government, though if it averts the construction of still another ‘competing’ road to the Maritime provinces it will not be made in vain.

The Senate expressed its disapproval of the bargain, and then let it go through. Evidently Messrs. Mackenzie and Mann’s “emergency” found more credence or more sympathy than Mr. Winston Churchill’s.

Meantime the people of Canada have bought some very valuable experience, and have formed some strong resolutions as to locking stable doors in future.

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CONTENTS

	PAGE
ANDREW MARVELL'S PROSE WORKS: A HISTORICAL STUDY	113
<i>W. D. TAYLOR.</i>	
THE PARABLES	126
<i>S. H. GRAY.</i>	
THE POPPY AND THE VINE	135
<i>W. L. GOODWIN.</i>	
MECHANICAL MEASUREMENT OF TIME	152
<i>N. F. DUPUIS.</i>	
THE GRANGE IN CANADA	164
<i>H. MICHELL.</i>	
WHAT THE PRESENT WAR MEANS	184
<i>J. CAPPON.</i>	
FOOD AND ITS ORIGIN	198
<i>W. T. MacCLEMENT.</i>	
THE EUROPEAN WAR AND THE PEACE MOVEMENT	205
<i>O. D. SKELTON.</i>	
ROMAN IMPERIALISM	215
<i>W. GORDON.</i>	
CURRENT EVENTS	219
The War.	<i>W. L. GRANT.</i>

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ANDREW MARVELL'S PROSE WORKS: A HISTORICAL STUDY.

IT is my intention in this article to consider in detail only Marvell's prose works, and to consider them chiefly from a historical point of view. Manifestly therefore it will be incomplete. How can one, for instance, fully understand Marvell without climbing that mountain of sublime imagination, "A Horatian Ode on the Return of Cromwell from Ireland" Space, however, forbids me to do so. To make good the deficiency I must be content to give a brief account of his earlier work, and to indicate with equal brevity the qualities of his writing.

Marvell's life consists of some dimly perceived, bare facts, and some traditional anecdotes reported by Aubrey, Anthony Wood, and Cook, the first editor of his works. He was born in Lincolnshire in 1621. At the age of twelve he entered Trinity College, Cambridge, and graduated thence five years later. He was an unruly student, at least one grave fault being chronicled against him; his running off to London with some Jesuits, while still *in statu pupellari*. Later, it is said, he lost his scholarship for some second infringement of the college rules. With all the mildness of Marvell's temper, with all his culture and toleration and cheerfulness, you occasionally find him intransigent and even brutal. Here already in his youth he practises the attitudes of rebellion!

In 1641, like most of the young men of that age who hoped for a career, he set out on a four years tour through France, Holland, Switzerland, Spain and Italy. In the time of his absence the struggle for ascendancy in England slowly swung round in favour of the Puritan party. Milton and Vane the Younger, with whose names Marvell's is forever coupled, could not stay out of that struggle. Why did not Marvell also take

part in it? The reason seems to be that with such finely tempered spirits as Lord Falkland and John Hales of Eton, he deplored the Civil War. From the beginning he knew it would breed not peace but confusion. Thirty years later he wrote these significant words: "I think the cause was too good to have fought for. Men ought to have trusted God. . . . For they may spare their pains where nature is at work and the world will not go faster for their driving."¹

From 1645 to 1660 was the May-time of Marvell's life. It was in these years he made his verdant garden poems with their flowers of imperishable fragrance. It was then, too, that the mettle of his soul was tried by friendship with such men as Milton, John Oxenbridge, James Harrington of the Rota Club, and the ever-memorable John Hales of Eton. "The magnetism of two souls rightly touched works beyond all natural limits,"² wrote Marvell felicitously in his "Familiar Epistles." One imagines he wrote thinking of his great nights and days with those writers and thinkers.

It was Harrington, in all probability, whose influence thrust him into political life. This writer in his "Oceana" had urged England to adopt the Venetian system of secret balloting, to make education compulsory, to divide the land into small estates, and to allow no person to inherit more than £2000. In 1659 he, Marvell and others were fervently discussing measures for the sure establishment of a Commonwealth in England.

What Marvell owed to the fiery-tempered Milton and to the Bermudan pastor, Oxenbridge, there is no balance to measure. One would too greatly dare who described the spiritual influence of "those rightly touched souls," working on him beyond the limits of vision. But the results of it are in our hands. In Oxenbridge's house in Eton where for a time Marvell lived as a tutor to one of Cromwell's nephews, he wrote the fairest of vesper-songs. Milton more than once besought his superiors to appoint him assistant Latin secretary; and, in return, so tradition says, Marvell contrived that his friend should escape the rage of kings and prelates.

¹p. 212, vol. II, Marvell's Works, 1776.

²p. 404, vol. I, *op. cit.*

It was to John Hales, however, that he owed most. In temper he resembled him: his humour was the same, with a pinch of salt added: and he deliberately endeavoured to make better known the tolerant ideas of this droll old scholar. The disciple nobly recognized his master when in the "Rehearsal Transposed" he said, "I reckon it not of the least ignominies of that age that so eminent a person should have been by the iniquity of the time reduced to those necessities under which he lived; as I account it no small honour to have grown up into some part of his acquaintance and conversed a while with the living remains of one of the clearest heads and best prepared breasts in Christendom."³

In Richard Cromwell's Parliament of 1659, in the Convention Parliament of 1660 and in the parliament which succeeded it, Marvell sat as member for Hull. His relations with his constituents were most intimate. From November, 1660, onwards he sent them numerous letters containing the pith of the business transacted in the House of Commons; when any matter of great importance was being discussed or any matter affecting the trade of Hull—the duties to be imposed on salt and coal, the granting of a patent for lighthouses on the Humber, the erecting of a ballast wharf at "Yarrowslike on Tyne," etc., etc.—he wrote daily. In return, as a token of their favour, the Corporation of Hull sent him each Christmas a barrel of ale.

It is in the second half of his life, in the period between 1660 and 1678, that Marvell's work is important for history. During those years he wrote his letters to his constituents, "Of the Growth of Popery and Arbitrary Government," "The Rehearsal Transposed," and various pamphlets auxiliary to these. In them he discloses his mind—the mind of one tolerant in the main—regarding the claims of the Church of England, the quarrels between Lords and Commons, and the foreign alliances and home government of Charles.

Marvell's letters to his constituents are not human documents. He gives a bare record of what has taken place in parliament. When speaking of the powers of the sovereign and of the bills against Nonconformism we could gather very

³p. 129, vol. II, *op. cit.*

little as to his own opinions, were it not that we read with other of his works in mind. It was impossible for him to be more open. The House of Commons was extremely jealous of its privileges, of which one was secrecy of debate. The court party, too, were quite prepared to do physical injury to any man who unsupported opposed the King's wishes. Even as things were Marvell seems to have felt at times that he ran serious danger in writing to his constituents. "Seeing the times are something critical," he writes in 1675, "besides that I am naturally and now more by my age inclined to keep my thoughts private, I desire that what I write down to you may not easily or unnecessarily return to a third hand in London."⁴

Still, despite the guardedness of Marvell's expression, one can learn much from the record they contain. Take, for instance, his account of the struggle between the Lords and Commons over questions of privilege. The two houses, says Marvell, differed seriously on many things in the first half-dozen years of Parliament, but on none of "high and dangerous consequence" till the question of the legal jurisdiction of the House of Lords came up in 1668. On May 25, 1668, he writes: "The Lords have judged and fined the East India Company as we think illegally upon the petition of one Skinner a merchant, and they petitioning us for redress, we have imprisoned him that imprisoned them; and we on Monday sent to the Lords severe votes against their high proceedings." This struggle over Skinner the merchant, and the East India Company, went through many peripeteias during the next two years. Discussions on important bills were neglected while the two bodies snarled at each other over it. The House of Lords condemned Sir Samuel Barnardston, Deputy Governor of the East India Company, to pay a fine of £300; the House of Commons ordered him to act like a good commoner and not pay it. They also called before them everyone who dared to discuss publicly the "Grand Question"; and they brought in a bill declaring "that the Lords had no right to try original causes touching Life, Liberty, corporal punishment, nor of Title or Property of Lands, Tenements, etc., nor to tax damages for any injuries." This quarrel so seriously interfered with the business of Par-

⁴p. 254, vol. I, *op. cit.*

liament during two years, that when it met in February, 1669, the King called both houses to the Banqueting House in Whitehall, and adjured them to be reconciled, and to raze all records of their differences from their journals. This they did, "infinitely satisfied with the King's prudence, justice, and kindness." But the quarrel over the privileges of the two houses did not thereupon die down. For a year or two it took new shapes. In 1671, for instance, there arose an altercation over a money bill; for the Lords introducing some changes into a Bill of Forain Commodities, the lower house "made a solemn vote that aids given by the Commons ought not to be altered." Later in 1675 the old quarrel regarding the legal rights of the House of Lords blazed up in full fury again on the occasion of a certain Sir John Fag having appeared before the House of Lords. References to this case recur in the letters till they end.

I have given this fairly detailed account of one of the quarrels between the two houses because it illustrates the nature and the spirit of Marvel's record. Little indeed can be learned from it of his own opinions on the matter; but what little there is goes to show that he commended the tenacity which the House of Commons displayed. One cannot help feeling that the mayor and corporation of Hull read his so colourless narrative as if it were a chronicle of Parliamentary triumph.

The reader of the greatest of Marvell's pamphlets—*Of the Growth of Popery and Arbitrary Government*—will wonder at this opinion. Published anonymously in 1677 it contains, one would imagine, a frank utterance on political affairs. And if that is so, it contains some frank abuse of the very Parliament he seems to praise in his letters. One-third of it, he says, is composed of Government placemen, Commissioners of Plantations, Commissioners of Prizes, men who find it a hardship to vote against their conscience. Another third more hungry and dangerous than the first spend the session seeking for office. Of the remainder more than half are mere bravos who live on the bribes they receive for their votes in the taverns of Westminster and Whitehall. "The charges of their elections are defrayed whatever they amount to, tables are kept for them at Whitehall and through Westminster that they may be ready at

hand, within call of question: all of them are received into pension and know their pay-day, which they never fail of: insomuch that a great officer was pleased to say 'that they came about him like so many jackdaws for cheese at the end of every session.' There is only a mere scantling, a handful of salt, who are above hopes, fears, and dissimulation."⁵ In "Of the Growth of Popery and Arbitrary Government," Marvell condemns that very House of Commons which he praises or seems to praise in his letters.

In considering this difficulty we must remember Marvell's purpose in writing the pamphlet—to bring about a dissolution: he endeavours to show that the House of Commons having fought a hard battle for the integrity of the English constitution is daily becoming less able to sustain its independence against the sapping underwork of the court and court bribes, and that it should immediately be dissolved. While, therefore, he exalts the few just, good men remaining in Parliament, he represents them as fewer than they were in reality. If that is not so, how did it come about that this mere handful of salt, in number not one-sixth of the House of Commons, declared its power over Money Bills, passed the Test Act and Habeas Corpus Act, and challenged the King's right to make and unmake foreign alliances?

"Of the Growth of Popery and Arbitrary Government," as I have said, is Marvell's greatest pamphlet. It was published anonymously in 1677 and gave much concern to the government, its declared purpose being to bring about the dissolution of the 'Cavalier' Parliament. He begins his narrative by telling how Charles tricked Parliament into giving him money for the Dutch War of 1672. In October of that year he asked for money to defend the nation against France, conscious the while that three or four months earlier he had made an "invisible league" with that country. Marvell describes the making of it in words which show he had a dark suspicion of its most secret contents. "The King in June, 1670, went down to Dover to meet, after a long absence, Madam, his only remaining sister. . . . Upon her first return to France she was dead, the Marquis of Belfonds was immediately sent hither, a person of

⁵pp. 533-540, vol. I, *op. cit.*

great honour despatched thither; and before ever the inquiry or grumbling at her death could be abated in a trice, there was an invisible league, in prejudice of the triple one struck up with France to all the heights of dearness and affection. As if upon dissecting the princess there had some state philtre been found in her bowels, or the reconciliation with France were not to be celebrated with a less sacrifice than of the blood royal of England. The sequel will be suitable to as ominous a beginning.”⁶

This ominous sequel he then describes. War was declared against Holland in 1672, the clock in the council-chamber in which the matter was decided, being set forward, so Marvell tells us, in order that no last-moment compliance of the Dutch might be of avail. It was a most unsatisfactory war for England. The French carried all before them on land but allowed the English to fight their battles at sea unaided. When peace was at length concluded, King Charles still supported his ally. He allowed his Scotch and Irish regiments to remain in her army; he even permitted new men to be impressed to serve in them; and he gave command of the host which hovered like a dark cloud over London at Blackheath, to a French papist. It is not indeed to Charles that he lays the account for these misdeeds but to “the conspirators”—certain Satanic agents who mean to make their King a monarch like Louis XIV and to introduce into England a religion worse than “open Judaism, or plain Turkery or open Paganism.” With these ends in view they married the Duke of York to a Catholic and in 1675 contrived a test oath—happily repudiated by both houses—by which all holding official positions were to swear never to withstand with arms anyone commissioned by the King. In short, they plotted to disturb the felicitous balance of the English constitution. “There is nothing,” says Marvell at the beginning of his treatise, “that comes nearer in Government to perfection than where the monarch, as with us, enjoys a capacity of doing all the good imaginable to mankind, under a disability to all that is evil.”⁷ The conspirators were attempting by evil council to the King and by bribing Members of Parliament to destroy this perfection.

⁶p. 463, vol. I, *op. cit.*

⁷p. 444, vol. I, *op. cit.*

One-third of the pamphlet deals with the intrigues of the conspirators in the session of Parliament which came after the long prorogation from November, 1675, to February, 1676; it is to the description of their doings, indeed, that his whole narrative leads. When the session began the question was at once raised whether it was legal for them to sit. The Earl of Shaftesbury and one or two others held that it was not; and for their opinion were sent to the Tower. Opposition was put down in the House of Commons by the help of the pensioners of the court and of the French Ambassador. This matter decided, they settled down to a consideration of supply, and voted speedily a quite inadequate sum—£200,000—promising to give more as soon as the King made known his intentions regarding the Netherlands, and begging him in more than one address to make an offensive and defensive alliance with that land. The King urged them to take thought of the needs of the country, adjured them to remember his ancient right to settle all such matters, and blamed their obstinacy. Negotiations went on till July 16th, when Mr. Seymour, the Speaker, declared they were adjourned till the 3rd of December. "And in the same moment stamp'd down on the floor (trampling upon and treading under foot, I had almost said, the privilege and usage of Parliament)." On the 3rd of December he repeated this high-handed act.

Mr. Burel, in his book on Marvell in the English Men of Letters series, insists that he was a great Parliament man: the justice of his claim is established by the work under consideration. In it, however indignant he may be against the cowardice and treason of individual members, he never speaks of the whole assembly without pride. It is for him the keystone of the felicitous English constitution; he feels that he has suffered sore personal injury when its personal privileges are infringed. The pamphlet is long and it is rendered obscure by many digressions and interpolations; yet in its rambling pages burns a magnificent zeal for its dignity and power. Wordsworth in a famous sonnet sets Marvell beside Milton, Hampden, and the younger Vane. No deed or writing of his entitled him to that proud eminence, so much as the tireless concern he showed for the integrity of Parliament in this work.

Marvell in popular estimation is a nonconformist champion; but he never appears under that guise in his letters: indeed, a reader having no knowledge of the man would certainly construe his references to nonconformists as indignant utterances against them. They are first mentioned in June, 1663, when the House of Commons was discussing a bill against conventicles, and preparing, as he says, "many remedies against refractory persons." The next reference occurs on March 7th, 1667-1668: "The House resumed the debate occasioned by the information of several members concerning the insolencies of nonconformists in some part of the nation, disturbing ministers in their churches and setting up their own preachers." In November, 1669, there was a rumour in London that Ludlow had returned and that Commonwealth men were flocking round him and discussing New Models, which gave the House of Commons much concern. A little later it was stimulated to finish the discussion of the "Bill of Conventicles" by a report that Fox the quaker had said that "he owned no King and that the King and the duke his brother were bastards." Marvell, as may be gathered from these references, shows no special friendliness towards nonconformists. He seems not only to acquiesce in but to believe in the measures taken against them.

We can conclude little, however, as I have said, regarding his real opinions from the letters: they are a record of the doings of the House of Commons, not of his thoughts. Not Marvell but the honest old royalists—those who esteemed no balsam sovereign enough to heal the aching of their wounds but a piece of moss from the skull of an enemy—grew alarmed at reports of Ludlow having returned and of conventicles being held in Westminster.⁸ Indeed in one of his "Familiar Epistles" he calls the bill on which the House of Commons was engaged during these rumours, "the terrible bill of conventicles."

It was not in the letters but in a pamphlet written in 1672, "The Rehearsal Transposed," that Marvell appeared as the champion of nonconformity. This was written in reply to a preface to Bishop Bramhall's "Vindication of Ecclesiastical Policy," published in 1672. The author of this preface had

⁸p. 457, vol. I, *op. cit.*

written books of a similar nature in the two preceding years, in 1670 "A Discourse of Ecclesiastical Policy," in 1671 "A Defence and Continuation of Ecclesiastical Policy," which, while of no value in themselves, convey some idea of the writing common at that time in defence of the Church of England, and against Nonconformists. They attack Calvin and Calvinism with vehemence, protest that the King is head of the national religion, demand that the King force dissent into conformity with his wishes, and ridicule the notion that the ceremonial of the English Church is a sop to Roman Catholicism. Now while the occasion of the "Rehearsal Transposed" was the preface to a new edition of Bramhall's book, it was really an attack on all the works of its author and the policy they defended. This makes it historically important; it is a general account of the ideas regarding religion and church government of the "moderates" of the Restoration.

In 1670 no one, neither Anglican nor Nonconformist at least, insisted that only those in a certain church, only those who followed a certain ritual would receive the reward of salvation. Most writers were in agreement with Hales that "it is not a matter of wit and subtlety to know how to be saved." Even a "dull, a silly and unlettered one" can with ease apprehend what is necessary to save him.⁹ Heresy on questions of church government or on the ceremonies to be used in church worship were not to Hales a vital matter; by 1670 most religious controversialists were in tacit agreement with him.

It is curious to note how different conclusions the two parties drew from this agreement. The writer of the preface to Bramhall concludes, for instance, that since ceremonies are not a matter of conscience the Nonconformists have no right to talk of their "horrible unwarrantableness." "There is not anything," he says, "by which they divide and distinguish themselves from the Church of England that can so much as pretend to the least footsteps in the word of God." And therefore if the King thinks it wise that all his subjects should use the prayer-book of the Church of England, they cannot plead conscience. It is purely a matter of expediency,

⁹Hales's Tract on Schism, Works, 1765.

to prevent religious extravagancies. If there were no such decree, wild men like Fox who unblushingly declare the King, to be no King, will multiply and put an end to the possibility of just government.

The nonconformists and those who sympathized with them drew a conclusion directly the opposite. Hales thirty years earlier had declared that to plead reasons of state for conformity was merely to set up scarecrows with which to frighten men. Above all things the heads of the church should be careful not to wound tender consciences; they should strip from their services everything unessential." Prayer, confession, thanksgiving, reading of scriptures, exposition of scriptures, administration of sacraments in the plainest and simplest manner, were matter enough to furnish out a sufficient liturgy though nothing either of private opinion or of church pomp of garments, of prescribed gestures, of imagery, of music, of matter concerning the dead, of many superfluities which creep into the churches under the name of order and decency did interpose itself. For to charge churches and liturgies with things unnecessary was the first beginning of superstition; and when scruples of conscience began to be made and pretended, then schisms began to break in."¹⁰

This is exactly Marvell's position in "The Rehearsal Transposed." But he goes further, and lays the whole blame of the religious strife on Laud and his followers. It was he who with an irreligious zeal for newfangled ceremonies and Arminianism "deformed the whole reign of the best prince that ever wielded the English sceptre." Do not suppose, however, that he includes the whole body of the English clergy. Among them, he says, are the eminentest for piety and learning in Europe. Only such as this writer of this preface to Bramhall's work receive his condemnation; they are followers of Laud, and do cut and slash about vestments and ceremonies, "rather in a swash-buckler and hectoring fashion than either like philosophers or like Christians."

Marvell's opinions regarding the position of Nonconformists in the state and the unrighteous deeds of King's councillors

¹⁰p. 127, vol. I, Hales's Works, 1765.

which I have sketched, become very well the friend of Milton, Harrington and Hales. His glorying in the independent spirit of Parliament and his plea for tolerance are not unworthy of them. Nor does the raillery which abounds in his work come strangely from the lips of the maker of the 'metaphysical' wit in "On Nunappleton House." But in one set of his works—in his political satires—he is alien to himself and to the friends of his youth: in them appears a vein of intransigent irrationality.

Let us examine one of these—"A Historical Poem." In it Marvell tells all the stories current of Charles's amorous excesses, of his intrigues with Louis XIV over Dunkirk, of his relations with the Duchess of Orleans, of his attempt to coerce England into line with his wishes by means of the Blackheath army. He tells them too with shut-eyed brutality, in a rough doggerel measure, which carries in it, so to speak, the breath of popular malice.

Bishops and deans, peers, pimps and Knights he made,
Things highly fitting for a monarch's trade!
With women, wine and viands of delight
His jolly vassals feast him day and night.
But the best times have ever some alloy,
His younger brother died of treachery.¹¹

There is a hint here that Charles II had some hand in the premature death of his youngest brother, the Duke of Gloucester. This was the belief of the citizens of London and is an instance of suspicion creating a crime. The Duke of Gloucester died of smallpox on September 13, 1660, to the great grief of his brother the King.

The hints of other unnatural crimes committed by Charles II in "A Historical Poem" are equally unfounded. In the mimics of the spentrian sport, it is true, he outdid Tiberius; his court was a palace of sin; but the evils which this poem mentions had no being outside of popular malice. It suited Marvell's scheme of vilifying the King to bring them from the nooks and corners of rumour and present them more at large in his satirical pages.

¹¹"A Historical Poem."

So far I have given an account of Marvell's opinions regarding the parties and the government of his time. To make a complete study of the man and his influence, however, it is not sufficient, as I said at the beginning, to do that. The value of opinions can be truly estimated only when considered along with the style in which they are clothed; taken in the abstract they are misleading. I ought therefore now to consider, for instance, such a thing as Marvell's raillery, which earned him the name of "the greatest droll of the age" and provoked the imitation of Swift. But to do that would be too long a task for the present.

W. D. TAYLOR.

THE PARABLES.

THE first three evangelists repeat the tradition that on one occasion the disciples asked the Master "Why speakest thou to them in parables?" They also report Jesus' answer, that strange, hard saying which has been so great a perplexity to those who would reconcile it with the gracious character and winning personality of the Founder of the Christian faith. (Matt. 13: 13, Mark 4: 11, Luke 8: 10). What significance that question had for the evangelists or for those Christian communities for which the gospels were written, and in what sense we are to understand Jesus' reply to it, whether, indeed, such a question was ever put by them, and so answered by Him are questions of great interest to the special student. But the average reader of the New Testament is content to accept the fact that Jesus taught by parables as he accepts the fact that Socrates taught by questioning and Bunyan by writing allegories, and he would be slow to believe that the Great Teacher had any other intent than the desire to make the truths of the Kingdom plain and winsome to the least and dullest of his hearers. But it is when we summon up in our minds those various and many-coloured pictures in which so great a portion of the recorded teaching of Jesus is visualized, that we feel how beside the mark it is to speak of his *adopting* the parabolic method with this or that intent, as if He consciously selected the manner of His speech on every occasion. It would be nearer the truth to say that He could not help speaking in parables. His whole manner of speech is concrete and pictorial through and through. His conversation and address abound in pictures, metaphors, concrete representations of the idea. Beside the parables strictly so called, we have to keep in mind the almost limitless number of short, pithy and concrete phrases that fell so easily from his lips. Embedded in the teaching, part and parcel of it, what varied pictures: the narrow gate, the house on the rock, the judge sitting at the gate, the children playing in the market, the flowers on plain and hillside, the lightning flashing across the sky, the hen gathering her chickens, the women grinding, the

men driving their oxen afield, the fields white to the harvest, the stricken sparrow, the shut-door, the father in bed with his children about him, the ox fallen in the well, the old and new wineskins, the patch on the garment, the girded loins, the burning lamp, the waiting servants, and so on almost without limit. Browning's poet, poking with his stick into the mortar of the houses and noting his neighbor's loss of temper, an uncomfortable seer of each man's frailty, was not more observant than He. His was the seeing understanding eye, and He saw things as they are with a directness of vision more Greek than modern; little, if anything, of the "pathetic fallacy" that reads our human sentiments into the look of flowers or the tragedies of animal life. He saw things directly, clearly, in their natural aspect, and connected them, so directly seen, with the great truths welling up within him. This habit is not acquired, it is not learned in schools; it is instinctive, temperamental, and was as characteristic of his personality as any gift we have is characteristic of us. It is a gift that we may have remarked in some people of our acquaintance, and in some writers we know, the aptness to clothe ideas in concrete images and to receive suggestions of truth in objects of passing observation. It belongs to the poetic rather than to the scientific order of mind, and is often an obstacle to abstract reflection. Sweetness of temper, unselfishness and strong religious faith do not produce the gift, for it is innate, but they go far to give it scope.

"The pure in heart see God."

"Earth's crammed with heaven,
And every common-bush afire with God,
But only he who sees, takes off his shoes."

Our Lord Jesus Christ in the days of his flesh possessed this gift, and the freshness, directness and sweetness of his faith in God, and his love of all simple and true things in nature and men gave it freedom. He looked on the world of nature and man out of larger eyes than ours and was quick to detect therein those exquisite analogies that exist between things natural and things spiritual, analogies which are possible only because both worlds are the expression of the one Mind and Will. The world we behold is not a hard and fast

world, the same world to each one of us. Its meaning changes as the soul changes. And its deepest significance is only read by those whose souls are pure and whose eyes are single.

The word parable is used forty-eight times in the gospels, and often to denote short similitudes, metaphors and proverbs. Strictly speaking a parable is a complete story or picture, resting on a comparison. The number of these latter is fairly determinable and most writers confine themselves to a discussion of these.

The parables have been classified according to various principles of classification, none of them quite satisfactory. The only classification it seems to me that would be satisfactory is one that finds its principle of classification in the relation which the picture bears to the truth to be enunciated. For example, there are parables, such as the sower, which find in some law or observed process of nature or human life, the law that holds good in the higher realm of spirit; there are parables which find in some accidental or temperamental relation a hint or suggestion of the spiritual truth, such, for example, as the unjust judge, or the unjust steward. These parables, since they are not based on the unquestioned law and invariable nexus of things, but on some accidental relation of persons, have not the convincing force, for modern readers at any rate, of those that rest on the discovery of a principle or law which holds good in either sphere.

Again, we have parables of the conventional eastern type, tales of kings and their servants, of banquets, and weddings, more artificial constructions of a strongly oriental flavour..

Others, preeminently the good Samaritan, may be a page out of contemporary history, used as an illustration of the actual practice of the truth He would drive home.

We cannot leave the consideration of this aspect of the parables without remarking on the character of the Lukan parables. The question of their teaching is not before us now, but the question of their form, and finish. Among the eighteen parables that are peculiar to this gospel are: the two debtors, the good Samaritan, the chief seats in the synagogue, the lost coin, the lost sheep and the lost son, the unrighteous steward, the rich man and Lazarus, the Pharisee and the publican. One is at a loss to know why Luke

alone has these parables, and why these are the richest in feeling, in colour, and in artistic arrangement of any of the parables. But we may note the fact in passing. Take one, the parable of the rich man and Lazarus. I doubt if anywhere in literature there can be found anything of like compass that is artistically more perfect than this little story. The warm rich eastern colour of it, the broad contrasts delicately softened and blended by the warmth of feeling that pervades it, the plaintive cadences of the dialogue—"And he said, I pray thee therefore, father, that thou wouldst send him to my father's house, for I have five brethren, that he would testify unto them lest they also come to this place of torment. But Abraham said, They have Moses and the prophets, let them hear them. And he said, Nay, father Abraham, but if one went unto them from the dead, they will repent. And he said unto him, If they hear not Moses and the prophets neither will they be persuaded though one rose from the dead"; these alike appeal to the imagination and move the heart of the reader. Beside this, and indeed the Lukan parables in general, the parables of the other evangelists show off thin or dark, deficient in warmth and beauty in the comparison. If this raises the question of the distribution of the parables in the gospels, it is only right to add that this is only one of the many questions that are raised and cannot be, as yet, satisfactorily answered.

We shall now confine our attention to the more important subject of the teaching of the parables. That teaching has for its main subject the Kingdom of God. The parables of Jesus may be said to illustrate the nature, mode of coming, and especially the qualifications of those who would enter into the Kingdom of God.

Now, if we had no other word of Jesus than the parables and wished therefrom to arrive at a clear conception of the nature of the Kingdom and the character of its members, we might reach either of these two conclusions:—

1st, that the Kingdom of God as set forth in the parables is an ideal Kingdom, the sovereignty of God in the hearts of willing men, a spiritual world of regenerated humanity. Taken in this sense the highly Jewish and apocalyptic colouring of some of the parables must be regarded as accidental or metaphorical. So, A. B. Bruce, etc.

Or, 2nd, the Kingdom of God may be looked upon as the church, and the parables have reference to the nature and qualifications of the members of the Christian community. So mainly Trench and other interpreters.

But if we take the parabolic teaching not in separation from, but in connection with, the main trend of the teaching, we arrive at a quite other result. It is our task to determine from the explicit and unparabolic language of Jesus what he meant by the Kingdom of God, and then to discover how far the parables fit in with and amplify that teaching. This can be done without any show of violence to them, and it may be that, in so doing, we shall find a place for the apocalyptic frame in which some of them are set.

Let us, then, turn to one of the gospels and put together the words of Jesus in which the Kingdom is referred to.

How does Jesus speak of the Kingdom of heaven in the unparabolic sayings in Matthew? He begins his ministry by proclaiming its near advent. It is at hand. This is the good news he has to tell. The disciples are to repeat the good tidings. They are to pray for its coming. It will not come in the lifetime of the Messiah, but after his death when he will come as the Son of Man. Its coming will usher in the end of this dispensation. It will become an accomplished fact immediately after the great tribulation which is to accompany the fall of Jerusalem, and within the lifetime of this generation. God alone knows the exact day and hour of its coming, and ere it comes the good news must be preached to all nations. When it comes, the apostles are to sit on twelve thrones judging the twelve tribes of Israel. Only those will find a place in it who are pure in heart and are persecuted for righteousness' sake. Those who break the Mosaic law are to be least in it, and their righteousness must exceed the righteousness of the Scribes and Pharisees who would enter it. Rich men may hardly expect to be in it, but those who are childlike of heart and do the will of God. They must give up earthly possessions for it, even life itself. Some will renounce marriage. For every true disciple it must be the first and paramount object of his search.

This is the nature of the Kingdom Jesus spoke of, a new order of things, a rule of God to come from above, suddenly, unexpectedly by a Divine entrance into this sphere of things.

The Son of Man of the apocalyptic expectation is to rule in this Kingdom and in his company are those who are in spirit one with its heavenly character.

With this general concept of the nature of the Kingdom in mind, let us turn to the parables. There are two parables from the Logia, which Matthew alone reports, which are in entire accord with the spirit and letter of the escatological conception of the Kingdom. These are the Tares and the Drag-net.

The motive of the Tares is an assurance to the true disciple that, though in the present there are true and false sons of the Kingdom nominally included in its prospective members, the detection and punishment of the evil will be accomplished immediately on its coming.

The Drag-net enforces the lesson that the separation of the good and bad will be effected at the end of the age when the Kingdom is inaugurated.

Note the apocalyptic imagery. The sower of the good seed is the Son of man, the sower of the tares the devil. The Kingdom is to come at the end of the age. Then the Son of man will send forth his angels to gather the evil spirits out of his Kingdom and consign them to their fitting place, while the righteous shall shine forth as the sun in the Kingdom of their father. This is not a lesson for the multitude; "He that hath ears to hear, let him hear." Was it not of such parables that the word was spoken, "Therefore I speak unto them in parables that hearing they may hear and not understand"? We have found, then, two parables that are clearly in accord with the general conception of the nature of the Kingdom which we have gathered from the general discourse of Jesus. This gives us a point of view and a clue to the specific force of other parables.

Take the Sower. Here again Jesus turns to the seed for his analogy. The seed is now the word of the Kingdom. What word? His general ethical teaching? No! Rather it is the specific good news of the speedy coming of the parousia at the end of the age. Some men hear the good news and do not understand it. "In some hearts it awakens echoes that die away. But some hear it and *understand* it and bear in their lives the appropriate fruit of that sowing, i.e. the character that is formed in anticipation of the coming glory, and shows forth the influence of the new age shortly to be realized.

Two short parables, the Hid Treasure, and the Costly Pearl, enforce the truth that a man must strain every nerve and sacrifice everything to obtain the promised salvation. If these parables seem to teach that the Kingdom is a reality already present, it cannot be maintained that they are incapable of another interpretation. Their teaching is quite compatible with the view of the Kingdom we have found elsewhere. Coming events cast their shadows before, and in the vivid imagination of Jesus the true sons of the Kingdom were already entering into its possession and showing forth in their lives its appropriate and joy-bringing characteristics.

The Mustard-seed and the Leaven belong to the same collection from the Logia. These enforce the truth of the not necessarily long, but rather the sudden and miraculous and also secret growth of the Kingdom and are quite compatible with the escatological conception, whether the miraculous and secret growth be understood as the growth in men of the character of the true sons of the Kingdom or the growth of the doctrine of the Kingdom, the spread of the good news from heart to heart.

It would take too long to subject all the parables to this treatment. It is enough perhaps to have indicated a point of view, which will be found to do violence to none of a large group of parables, all of Mark's, nearly all of Matthew's, some of Luke's. In these parables various aspects of the Kingdom and the character of its citizens are set forth—that it is a gift of God unmerited by man and therefore calling on him for an awakened charitable heart toward his brother (the unmerciful servant) ; that it is not of man's earning but of God's disposing and therefore they are not to claim precedence therein on the ground of longer service (the labourers in the vineyard) ; that publicans and sinners may taste its joys while righteous persons are excluded (the two sons) ; that it requires in those who would enjoy it an inward fitness and preparedness and a patient continuance in well doing, for it may be longer in coming than they expect (the ten virgins) ; and that it is not to be waited for in dreamy expectation and sloth but in active use of the gifts God has given to each (the talents). These are but variations played on the main theme and in no sense contradict but rather presuppose that conception of the

nature of the Kingdom and the mode of its coming which we find in the words of Jesus.

But, if there is a large and important group of parables which imply or presuppose the escatological Kingdom of God, there is also another large and striking group which neither imply nor presuppose it. This group is made up of Luke's peculiar and beautiful parables. Here we meet with parabolic material that is purely ethical in tone, humanitarian in sentiment, and largely incidental in origin and personal in application.

Jesus sits at a Pharisee's table. A woman of the city enters the house and singles out the guest for a display of adoring gratitude, which staggers the host. Jesus speaks the parable of the Two Debtors to bring home to his churlish host the contrast between cold civility and love.

A man clamours about his brother robbing him of his inheritance and hears the parable of the Rich Fool.

One asks him, "Who is my neighbour?" and gets the Good Samaritan in reply.

Scribes and Pharisees cavil at His intimacy with disreputable people, and are answered by the Lost Coin, and Sheep, and Son.

He would teach persistence in prayer, and tells the stories of the friend at midnight and the unjust judge. In this latter parable alone of this group is there an apocalyptic touch—"I tell you he will avenge them speedily. Nevertheless, when the Son of man cometh shall he find faith on the earth?"

We need not complete the list, but content ourselves with this conclusion, that Luke's characteristic and exclusive parables are ethical in tone, incidental in their appearance, mostly personal in application, are without the formula "the Kingdom of heaven is like unto," and have no direct bearing on the Kingdom of God. They are compatible with any conception of the nature of that Kingdom. They belong to the eternal and universal ethic of Christianity, nay rather of humanity, and, reading them, we feel how one-sided is the view of those who speak of Christ's teaching as an "interim ethic," a morality for that time of preparation for the coming parousia and not of eternal significance. Luke's parables are the most effective answer to this view.

In conclusion, it seems to me quite clear that the parabolic teaching is throughout of one piece with the general teaching and outlook of Jesus. In the forefront of His thought is the Kingdom of God, the new dispensation, the Kingdom coming down from God out of heaven, Divinely-furnished and complete, the Kingdom which must shortly come when the days of tribulation are past, when He, the Son of man and his attendant angels are to rule on earth, condemn and cast out the unworthy, and judge with equity and love the meek of the earth. The parables, if they do not teach, imply this doctrine of the Kingdom, and none of them are found to contradict it. In them the nature of that Kingdom is a secondary matter, the thing of supreme importance is the character of those who will walk in the light of it. Jesus in the parables expounds no interim or provisional ethic, but the fundamental laws of the Kingdom, the inwardness, the humanity, the faithfulness and perseverance of those who, because they already exhibit the true nature of God's sons, are by their faith and open-heartedness, if not by the merit of their attainments, fit to be its members and are now virtually of it and in it. Like men of violence they drag its coming forward in time.

Therefore from this there follows this truth, that the teaching of the parables is of undying significance and endless application. Admitted that He looked with other eyes than ours upon the course of history, that His view was bounded by those escatological conceptions that were the atmosphere He breathed, the application of the truth enshrined in His parables to the needs of men in our day is not denied us. We have but to consider the Lukan parables to feel how unaffected by time and place His teaching is, and even of those parables that are most deeply steeped in apocalyptic imagery, the Tares and the Drag-net, it can truthfully be said, that the lesson they teach is as true, as capable of application to the life of this day, as it was to His. From considerations such as these we may turn as gratefully as ever to the expositions of Archbishop Trench or A. B. Bruce or Marcus Dodds, assured that, in as far as they have clearly grasped the point of the parable, and applied it to the hearts of living men, they are the disciples of Jesus Christ, bringing out of His treasury things old and new.

Toronto.

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THE POPPY AND THE VINE.

UNDER this title I propose to discuss some of the phases of that apparently universal craving among men for something which will "banish dull care," some magical potion to relieve all distress of mind and body, or to heighten and intensify artificially the feeling of comfort and well-being, which makes the joy of living. Goethe in his *Autobiography* naïvely characterizes this effect. "There is no question," he writes, "that as wine gives a freer character to the very places and districts where it is grown and drunk, so also do these vintage-days, while they close summer and at the same time open the winter, diffuse an incredible cheerfulness. Joy and jubilation pervade a whole district. In the daytime huzzas and shoutings are heard from every end and corner, and at night rockets and fireballs, now here, now there, announce that the people, everywhere awake and lively, would willingly make this festival last as long as possible." (Oxenford's Translation). Every man who is or ever has been young understands what Goethe refers to. But there are two quite distinct forces at work here. One is the desire for the feeling of pleasure, the tendency towards sensuality, and the other is the feeling that the tension of daily life must be relieved in some way. One is mere sensuality, the other the need for a condition favorable to recreation. Both forces are at work in the formation of the various drug-habits. I shall confine this article mostly to the discussion of opium and allied narcotics.

The sleep-producing properties of the poppy have been long known, there being even some reference to it, so it is stated, in Homer. "In ancient days, Homer is, I think, rightly reported to have known the virtues of opium." Opium Eater, p. 115). Its medicinal properties are referred to by Theophrastus (372-287 B.C.), who also describes an extract of the whole plant under the name *μηκωνιον*. Also, Virgil-Georgics—"sleepy poppies harmful harvests yield" (Dryden's Trans.) Dioscorides (1st or 2nd century, A.D.) distinguishes this *μηκωνειον* from *ὄπος*, the juice of the capsules, the diminutive of which, *ὄπιον*, is origin of our word opium. It was, as it were, "the dear little drop of juice," so wonderful in its effects!

Gower (1390) refers to the poppy as the plant

"which berth the sed of sleep."

It has always been a favorite reference among the poets. Shakespeare in *Othello*:—

"not poppy, nor mandragora,
Nor all the drowsy syrups of the world
Shall ever medicine thee to that sweet sleep."

"Ere night shed poppy twice o'er the weary'd world."
"A little poppy, sir, were good to cause you sleep."

"On this my pensive pillow, gentle sleep,
Descend
And place thy crown of poppies on my breast."

Keats uses the same metaphor in his *Ode to Sleep*:—

"Ere thy poppy throws
Around my bed its lulling charities,"

and dwells lovingly upon the idea in *Endymion*,

"There blossomed suddenly a magic bed
Of sacred ditany and poppies red,
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Moreover, through the poppies stole
A breeze most softly lulling to my soul,
And shaping visions all about my sight
Of colours, wings, and bursts of spangly light,
The which became more strange and strange and dim,
And then were gulphed in a tumultuous swim:
And then I fell asleep."

"A little onward ran the very stream
By which he took his first soft poppy dream."

In *Sleep and Poetry* the same poet sings,

"Yet I must not forget,
Sleep quiet with his poppy coronet."

And Keats also supplies us with a most enchanting comparison picture of the vine in the well-known lines:—

"O, for a draught of vintage that hath been
Cooled a long age in the deep-delved earth,
Tasting of Flora and the country green,
Dance and Provençal song, and sunburnt mirth!
O, for a beaker full of the warm south,
Full of the true, the blushful Hippocrene,

With beaded bubbles winking at the brim,
And purple-stained mouth;
That I might drink, and leave the world unseen,
And with thee fade away into the forest dim."

Both the poppy and the vine are a way of escape from carking care and the distress of ill-health. And there is a perfect parallel in the history of both,—lauded at first by poet and physician, used more and more extensively as medicines and as promoters of social pleasures or for mere sensual enjoyment,—both have at last become not merely national but international problems of grave import, as witness the international conference on alcohol just closed, and that on opium, lately held in Hague (1911-12). The whole subject is most difficult and intricate, and not by any means to be settled by dogmatic vehemence or impassioned exhortation. The appeal must be to sound judgment and good sense. The facts must be fully learned. This implies extensive scientific investigation, now already far advanced—a comparatively simple matter for opium and its products but more complex in the case of alcohol. There are still to be found intelligent people who are not convinced that alcohol in small and frequent doses may not be a harmless drink, while it would be hard to find such an advocate for the use of opium. And yet physiologically the two substances are closely alike, both belonging to the class *narcotics*. This resemblance will be plainly seen when the action of opium and morphia are described.

The opium poppy (*Papaver Somniferum*) is grown for the production of opium in China, India, Egypt, Turkey, Persia, and to a small extent in Bulgaria and a few other countries of Europe. In Germany it is grown for the sake of the seed, which yields a valuable oil. At the meeting of the Opium Commission in Shanghai in 1909 the German delegate stated that no opium worth mentioning was produced in his country.

Opium is made by cutting the unripe seed capsules and collecting the milky juice which exudes and hardens. Workmen go about among the standing crop making the incisions with instruments which make half-a-dozen cuts at one stroke. This is done in the evening and the opium is ready to be scraped off next morning. These scrapings are massed together and rolled up in poppy leaves making cakes or balls

containing from $\frac{1}{4}$ lb. to a pound of the drug. The moist substance contains about 10% of morphine. The U.S. Pharmacopœia requires 'not less than 9%', but it may vary all the way from 2.5% to 22.8%. In addition to morphine there are some 18 or 20 other substances of a similar nature, including *codeine*, which resembles morphine in deadening pain, but differs from it in not causing sleep. *Thebaine* is stimulant rather than narcotic in its action, and *apomorphine* is an emetic. The action of opium on the individual may thus vary in some cases where there is special susceptibility. The normal dose of opium is $1\frac{1}{2}$ grains containing about $\frac{1}{7}$ grain of morphine. *Laudanum*, or *tincture of opium*, contains about 1.4% of morphine, and the normal dose is about 8 drops. An opium pill contains about 1 grain of the drug. These quantities will enable us to appreciate better the stories of DeQuincey and Coleridge when we come to them.

The quantity produced and used may be judged from the fact that China at the beginning of this century was consuming 22,588 tons annually, one-seventh of which came from India. As frequent reference will be made to the "chest" of opium as a commercial unit it may at once be recorded that the "chest" is $149\frac{1}{3}$ lbs.

Opium owes its action principally to the chemical compound morphine, and although the usual effects of these substances are known, it may be well to give here a scientific statement which may be found fuller and more accurate than the popular idea. Taking up in order its action on the various organs we begin with the stomach. It tends to produce nausea and vomiting, and impairs digestion. Small quantities lessen sensation of hunger, due probably to action on nerve centres rather than to local action in stomach. Because of lessened perception of hunger and of gastric derangement, appetite is lessened. Constipation is caused by the diminished peristalsis of the bowels. Small doses have little or no effect on the heart and circulation, but there may be quickening of the pulse at first, due to nausea. Larger doses cause slowing of the heart, while the cutaneous vessels dilate (cf. alcohol). This gives rise to a full pulse and the sensation of warmth in the skin. Respiration becomes slower and at first deeper. The ordinary cause of death is paralysis of the respiratory centre. The

action on the brain is a pretty close parallel to that of alcohol. It may be described as for the most part a paralysis of the higher functions, usually preceded by a stage of excitement characterized by restlessness and increased mental activity. But the stage of excitement is sometimes entirely absent. As a rule the period of excitation can be maintained for a considerably longer time by the administration of small doses at frequent intervals, while a single large dose may cause deep sleep at once. During the first stage the imagination is often stimulated, the fancy has free play, and the creative powers are augmented, while the attention, judgment, co-ordination of the brain, and reasoning faculties are less keen than ordinary. In exceptional instances, however, the intellectual power and mental vigour are increased. The general effect seems to be that of a series of stimulations and depressions going on at the same time. Symptoms are greatly influenced by individual susceptibility and by race; and among Oriental peoples the stage of excitement is generally much more prolonged than with Europeans. The frame of mind induced by opium is most contented, sooner or later followed by sleep generally filled with dreams. The temperature may rise a little at first but in most cases there is a slight fall. In some individuals the use of opium causes redness of the skin and eruptions. In some cases instead of having a soothing effect it causes excitement and sleeplessness. In others it causes marked nausea, vomiting, *gastric pain*, and indigestion.

I have given this somewhat detailed account in order to show the close parallel with alcohol, but also to prepare for an examination of one or two notable cases. For the same reasons I now give an extract from Wilcox's *Materia Medica and Therapeutics on Chronic Opium Poisoning*:

"The effects, mental, moral and physical, are most deplorable. Symptoms vary, some individuals continuing the habit for many years with comparative immunity. He usually loses weight, becomes anæmic, and suffers loss of appetite and indigestion, with constipation sometimes alternating with diarrhoea. The pupils are contracted, the skin and tongue dry, the nails brittle, the hair prematurely grey, and falling out. Irregular heart, muscular tremors, and unsteady gait are other symptoms. The victim is nervous, lacking in energy and will-

power and unfit for work of any kind. He is utterly untrustworthy in statements and becomes lost to all sense of honour and uprightness, lying in the most bare-faced manner and even committing theft, if necessary, in his endeavour to obtain the drug. Melancholia and dementia may eventually supervene."

This dreadful passionless picture may serve as an introduction to the classical examples, DeQuincey and Coleridge, both of whom illustrated the leading features, but escaped the last and most degraded condition. In the *Opium Eater* DeQuincey gives a full and apparently sincere account of his own experiences. But on lately re-reading the book, I felt, if somewhat vaguely, something of a playing to the gallery, a covering up or justification of subtle moral obliquities. But I am not inclined to attach much importance to this feeling, but rather to look upon DeQuincey as a great soul whose moral greatness withstood the onslaughts of this soul-destroying habit. As his readers will recall, he began when a mere lad to use opium (to which he was introduced by a mistaken friend) in order to ease the pains of indigestion caused by a long period of semi-starvation. When it is remembered that a month's continual use may so confirm the habit as to make escape very uncertain, DeQuincey's case is all the more remarkable. Shortly after beginning the use of opium his circumstances were improved, but he was now in the toils. In his own words:—

"I had unfortunately at all times a craving for wine; I explained my situation therefore to Lord D——, and gave him a short account of my late sufferings, at which he expressed great compassion and called for wine. This gave me momentary relief and pleasure [note the "pleasure"], and on all occasions when I had an opportunity I never failed to drink wine, which I worshipped then as I have since worshipped opium. I am convinced, however, that this indulgence in wine strengthened my malady, for the tone of my stomach was quite sunk; but by a better regimen it might sooner, and perhaps effectually, have been revived." DeQuincey used opium mostly in the form of laudanum, and he became more and more a slave to it, using it constantly and in larger quantities, as is commonly the case. For it requires the larger dose to produce the effect as the system becomes used to the drug. This

"toleration" in DeQuincey's case became so pronounced that he kept a goblet of laudanum (more or less diluted) at hand and sipped it like wine, thus prolonging the stage of excitement and brilliant imagination. At one time he was using about a pint of laudanum a day, equal to 30 to 35 grains of morphia, of which the ordinary dose is one-seventh of a grain! He allowed himself this enormous daily quantity for long periods until his condition was such as can be best described in his own pathetic words:—

"This night, Wednesday, Dec. 25th [1844], about 7 pm. has first solemnly revealed itself to me that I am and have been long under a curse (q. the opium curse?), all the greater for being physically and by effort endurable and for hiding itself, i.e. playing in and out from all offices of life at every turn of every moment." . . . "Conquer it I must by exercise unheard of, or it will conquer me." . . . "Not fear or terror, but inexpressible misery, is the last portion of the opium eater. At certain stages it is not so. We know of a man called X—who has often jumped out of bed, bounced like a column of quicksilver, at midnight, fallen on his knees and cried out, while the perspiration ran down his wasted face and his voice waked all the house, 'O Jesus Christ, be merciful to me a sinner!' so unimaginable had been the horror which sleep opened to his eyes. Such is for some time its effect. [Cf. delirium tremens]. But generally in its later stages it is not horror, it is not fear: all these are swallowed up in misery." His struggles to free himself from the poison Nessus garment and the characteristic blindness and self-deception are well brought out in the following:—

"But now it appears more strongly that the cause of my misery must be the alcohol and the restoration dependent on the offing obtained from this alcohol." This was during his last attempt to abstain completely from opium, when he seems to have tried to fortify himself with alcohol, 'out of the frying pan into the fire.'! He abstained from opium wholly at this time for 61 days (1848), but was compelled to return to its moderate use, as the lesser of two evils. For the remaining ten years of his life he never used it excessively. His friend Jacox gives the following pleasant picture of him in these days, a relief after the horrors of pain:—

"Nothing could I observe so effectual to refresh and invigorate him, no spell so potent to dispel his languor, as a cup of good coffee. I have seen it act on him like a charm, bracing up his energies, clearing up his prospects, accelerating his speech, as well as the march of his ideas, and inspiring him with a new fund of that eloquence which held the listener rapt, yet swayed him to and fro at its own sweet will. The eye that had been so heavy, so clouded, so filmy, so all but closed, the eye that had looked so void of life and significance, that had no speculation in it, nothing but a weary look of uttermost lassitude and dejection, now kindled with lambent fire, sparkled with generous animation, twinkled with quiet fun." DeQuincey himself in the *Opium Eater* writes: "For tea, though ridiculed by those who are naturally of coarse nerves or are become so from wine-drinking, and are not susceptible of influence from so refined a stimulant, will always be the favorite beverage of the intellectual."

In his preface to the *Opium Eater* DeQuincey has a curious reflection on the origin of opium eating in a working community. "I was informed," he writes, "by several cotton manufacturers that their work people were rapidly getting into the practice of opium eating, so much so, that on a Saturday afternoon the counters of the druggist were strewn with piles of pills of one, two, or three grains, in preparation for the known demand of the evening. The immediate occasion of this practice was the lowness of the wages, which, at the time, would not allow them to indulge in ale or spirits; and, wages rising, it may be thought that this practice would cease; but as I do not readily believe that any man, having once tasted the divine luxuries of opium, will afterwards descend to the gross and mortal enjoyment of alcohol, I take it for granted

"That those eat now who never ate before,"

"And those who always ate now eat the more."

Turning now to Coleridge we find a quite similar story of a man of genius getting caught and held by the opium fiend. Traill in his *Life of Coleridge* tells the story as follows:—

"On the whole, the most probable account of this all-important era in Coleridge's life appears to me to be this: that in the course of 1801, as he was approaching his thirtieth year, a distinct change for the worse . . . took place in his con-

stitution: that his rheumatic habit of body, and the dyspeptic trouble by which it was accompanied, became confirmed; and that the severe attacks of the acute form of the malady which he underwent produced such a permanent lowering of his vitality and animal spirits, as first to extinguish the creative imagination and then to drive him to the physical anodyne of opium and to the mental stimulant of metaphysics." DeQuincey states as his opinion that opium killed Coleridge as a poet; and in a rather curious passage quoted in Page's *Life and*

Letters, he gives us a theory of the formation of such habits:—

"Nature provides to all men a sufficient supply of happiness, during that time when they have not sufficient intellect to appreciate and ascertain, or foresight to secure to themselves, sources of voluntary happiness—an involuntary happiness proceeding from an exuberance of animal joy and spirits: this she withdraws in a regular progression with the advancement of the intellect, and through the *instrumentality* of that very intellect. On the decay of these self-supporting spirits commences the incumbency (which rests on every man) to provide for himself a source of permanent stimulus; and at this crisis it is that wisdom most fails the soul of men; for at this period most men begin to resort to liquors and the turbulent bustle of the world to give a feverish warmth to their else shivering spirits. This is obviously every way a low and ruinous stimulus; but as some source of excitement is necessary, it remains to inquire *what?* And this I answer, that I am firmly persuaded is none but a deep interest in those exhaustless and most lofty subjects of *human life* and *human nature*," and so on.

But Coleridge's acquaintance with opium was probably much earlier than this. He himself tells us that

"In the summer of 1797 the author, then in ill-health, had retired to a lonely farmhouse between Porlock and Loriton, on the Exmoor confines of Somerset and Devonshire. In consequence of a slight indisposition, an *anodyne* had been prescribed, from the effects of which he fell asleep in his chair at the moment that he was reading the following sentence, or words of the same substance, in Purchas's *Pilgrimage*: 'Here the Khan Kubla commanded a palace to be built and a stately

garden thereunto. And thus ten miles of fertile ground were enclosed by a wall.' "

It is quite likely that the anodyne was laudanum, the favorite prescription of that and later times and administered for all pains and distresses of young and old under the names of Kendall's drops, nepenthe, Mother Winslow's Soothing Syrup, etc. It is more than likely that the vivid dream which gave rise to Kubla Khan was due to opium. Readers of the life of Coleridge must be impressed with the fact that he had used opium for a long time secretly before it became known to his friends. He at last attained the unique daily quantity of a quart of laudanum, equal to about 60 or 70 grains of morphine! In Traill's opinion opium was "the chief if not the sole cause of his morally nerveless condition." The decay of the moral sense brought on by the use of opium is seen not only in Coleridge's secrecy in the habit but in his relations to the Wedgwoods. Although he was living on their bounty and was held in affectionate regard by the distinguished brothers Thomas and Josiah Wedgwood, he remained on the continent a full year without communicating with them in any way. His letter of excuses when he at last learned of the death of Thomas Wedgwood is painful reading. The reluctance to write letters and the wandering habits were marked in both DeQuincey and Coleridge. In both cases letters even on subjects of importance remained unanswered for months or forever. Coleridge, like DeQuincey, filled many note books (huge heaps of loose paper, in the case of DeQuincey, overflowing tables and chairs and the room itself, until he was obliged to seek new lodgings) with vast schemes of literary labour never to be accomplished. What if Carlyle, also tormented with dyspepsia, had taken refuge in opium, instead of "dreeing his weird"! Referring to his book *The Logic of Political Economy*, DeQuincey writes (1844): "The substance I am too well assured is liable to no dispute. But as to the method of presenting the distinctions, as to the composition of the book, and the whole evolution of a course of thinking, there it is that I too deeply recognize the mind affected by my morbid condition. Through that ruin, and by help of that ruin, I looked into and read the latter states of Coleridge. His chaos I comprehended by the darkness of my own, and both were the work of laudanum. . . . Cole-

ridge had often spoken to me of the dying away of all hope. . . . Then I partly understood him, now perfectly, and laying all things together, I returned obstinately to the belief that laudanum was at the root of all this unimaginable hell.'

Proceeding from the individual to the nation we naturally choose China as the country in which opium is most distinctly and with horror and dread looked upon as a national curse and menace. That it is so regarded in China was abundantly evidenced by the proceedings of the Shanghai International Opium Commission in 1909. The scholarly Chinese delegate, Tang Kuo-an, in submitting resolutions for the Chinese delegation, made a remarkable speech in which occurs this passage:—

"I shall not yield to the temptation to describe the effects of opium in China. The leaders of the Chinese people look upon it as a dangerous foe to our very existence as a nation. Every instinct of self-preservation cries out against it. The past few years have brought some strange and notable apologists for opium—some strange and notable apologists for China as an opium-using country. Would that we Chinese, who are best in position to know the facts, could follow them with conviction! Would that we could dispel the sternness of the facts with this softness of speech." [Fine irony that!] He then goes on to point out that opium is a national menace to China, (1) by causing an enormous economic loss in useful production, (2) by enfeebling the movement towards reform and national progress, and (3) by tending to prolong the condition of exclusion from international politics on an equal footing with other great nations. He says: "It is not only as a barrier to keep us from entering into the brotherhood of the modern and progressive nations that we deprecate this curse, but also as a thing that will prevent us from being worthy of this brotherhood.'

While there are very early references to the poppy in Chinese literature, they are evidently directed to the good qualities of the seeds, as, for example, when Sue Chê in the tenth century in his poem *On the Cultivation of the Medicinal Plant Poppy*, writes: "I built a house on the west of the city. . . . The gardener came to me to say, 'The poppy is a good plant to have. . . . Its seeds are like autumn millet. . . .

When ground they yield a sap like cow's milk; when boiled they become a drink fit for Buddha.' " A medical writer, Lin Hung (12th century?), makes the first reference to the use of the capsules. He directs the entire head to be boiled, etc., and finally made up into cakes the shape of a fish. Later writers describe its use for diarrhœa, etc., but 'great care must be taken in using it, because it kills like a knife.' For centuries, then, opium was known and used in China but strictly as a medicine. It was not until the 17th century that opium *smoking* began. Tobacco smoking was in that century introduced by the Spanish, and the Dutch improved on this lesson by teaching the Chinese to smoke a mixture of opium and tobacco, and the step to smoking opium alone was soon taken. This is the account given by the Chinese themselves. Efforts to suppress opium smoking began as early as 1729 when the Emperor Yung Chên issued an edict with severe penalties prohibiting the sale of opium and the opening of divans. But opium smoking nevertheless spread until it became the practice of not the comparatively few, but of a very large proportion of the population, permeating all classes of the community throughout the empire. Up to 1796 most of the opium used in China was imported, but in that year its importation was declared illegal. The result of this prohibition was a rapid and vast increase in the cultivation of the poppy for the production of opium.

India now comes on the scene. In 1773 English merchants in India entered into the trade, which in 1781 was taken over by the East India Company, the import from India to China reaching 4,000 chests (about 600,000 lbs.) in 1790. From 1796 to 1858 opium was contraband in China, but the importation from India continued. The story of the opium wars as usually told is not pleasant reading for Englishmen. The only excuse for the refusal of England to stop pouring Indian opium into China is the rather poor one that if the importation from India ceased, that from other countries would still go on, as the Chinese officials could not or would not stop the smuggling of opium.

When the importation of opium was legalized after the second opium war in 1858, the poppy was extensively grown in China and the bulk of the opium smoked was, and continued

to be, of home manufacture. But after 1860 the importation from India greatly increased, and by 1880 it had become five-fold. At the beginning of the 20th century the number of opium smokers in China was estimated at from 25 to 30 millions, using 22,588 tons a year.

In 1906 the following regulations were promulgated by the Chinese government:—

1. The cultivation of the poppy to be restricted annually by one-tenth of its existing area.
2. All persons using opium to be registered.
3. All shops selling opium to be gradually closed, and all places where opium is smoked to discontinue the practice within six months.
4. Anti-opium societies to be officially encouraged and medicine distributed to cure the opium-smoking habit.
5. All officials are requested to set an example to the people, and all officials under sixty were required to abandon opium smoking within six months or to withdraw from the service of the state.

And now events came rapidly. In 1909, at the suggestion of the U. S. government, the Shanghai International Commission had its sittings and passed the following resolutions:—

1. That the International Opium Commission recognizes the unswerving sincerity of the Government of China in their efforts to eradicate the production and consumption of opium throughout the Empire; the increasing body of public opinion among their own subjects by which these efforts are being supported; and the real though unequal progress already made in a task which is one of the greatest magnitude.
2. That in view of the action taken by the Government of China in suppressing the practice of opium smoking, and by other governments to the same end, the International Opium Commission recommends that each delegation concerned move its own government to take measures for the gradual suppression of the practice of opium smoking in its own territories and possessions, with due regard to the varying circumstances of each country concerned.
3. That the International Opium Commission finds that the use of opium in any form otherwise than for medical pur-

poses is held by almost every participating country to be a matter for prohibition or careful regulation; and that each country in the administration of its system of regulation purports to be aiming, as opportunity offers, at progressive and increasing stringency. In recording these conclusions, the International Opium Commission recognizes the wide variations between the conditions prevailing in the different countries, but it would urge on the attention of the governments concerned the desirability of a re-examination of their systems of regulation in the light of the experience of other countries dealing with the same problem.

4. The International Opium Commission finds that each government represented has strict laws which are aimed, directly or indirectly, to prevent the smuggling of opium, its alkaloids, derivatives, and preparations, into their respective territories; in the judgment of the International Opium Commission it is also the duty of all countries to adopt reasonable measures to prevent at ports of departure the shipment of opium, its alkaloids, derivatives, and preparations, to any country which prohibits the entry of opium, its alkaloids, derivatives, and preparations.

5. The International Opium Commission finds that the unrestricted manufacture, sale, and distribution of morphine already constitute a grave danger, and that the morphine habit shows signs of spreading; the International Opium Commission therefore desires to urge strongly on all governments that it is highly important that drastic measures should be taken by each government in its own territories and possessions to control the manufacture, sale, and distribution of this drug, and also of such other derivatives of opium as may appear on scientific enquiry to be liable to similar abuse and productive of like ill-effects.

6. That as the International Opium Commission is not constituted in such a manner as to permit the investigation from a scientific point of view of anti-opium remedies and of the properties and effects of opium and its products, but deems such investigation to be of the highest importance, the International Opium Commission desires that each delegation shall recommend this branch of the subject to its own government for such action as that government may think necessary.

7. That the International Opium Commission strongly urges all governments possessing concessions or settlements in China which have not yet taken effective action toward the closing of opium divans in said concessions and settlements, to take steps to that end, as soon as they may deem it possible, on the lines already adopted by several governments.

8. That the International Opium Commission recommends strongly that each delegation move its government to enter into negotiations with the Chinese government with a view to effective and prompt measures being taken in the various foreign concessions and settlements in China for the prohibition of the trade and manufacture of such anti-opium remedies as contain opium or its derivatives.

9. That the International Opium Commission recommends that each delegation move its government to apply its pharmacy laws to its subjects in the consular districts, concessions, and settlements in China.

Then came the International Opium Conference of 1911-12. It will be interesting to read from the report of the British delegation their summing up:—

“The Shanghai Commission directed itself mainly to the subject of the opium traffic in the Far East, and was primarily concerned with rendering assistance to the opium suppression movement which the Chinese government had lately initiated. The present convention goes far beyond this. It has dealt with morphine, cocaine, etc., as well as with opium; and in presenting measures for confining the use of the two first-mentioned drugs and the others mentioned in Chapter III, to legitimate medical purposes, for placing the production and distribution of raw opium under rigid control, and for restricting with a view to eventual extinction, the trade in prepared opium, it has for the first time laid down as a principle of international morality that the various countries concerned cannot stand alone in these measures. It is not sufficient for a particular State to take adequate measures for the protection of its own subjects; it is also essential that it should assist the efforts of other countries by preventing the undesirable importation of drugs into their borders.”

“The acceptance of restriction measures in regard to morphine and cocaine stands to the credit of the British gov-

ernment which had already made the first important advance in regard to international co-operation in the matter of opium by the Anglo-Chinese agreements under which the exportation of opium from India to China will cease, having in the meantime undergone progressive diminution, by the year 1917, or at a previous date, if the Chinese government similarly accelerate the disappearance of local production. This earnest of good-will involving great pecuniary sacrifices on the part of the Indian Empire, materially helped us in urging on the Conference the general principles which inspired the convention, since it showed the disinterested sincerity by which His Majesty's government were actuated. As matters now stand, even if the difficulties to which we shall presently allude should impair or delay the full fruition of the labours of the conference, the fact will remain that it has marked an important step in international ethics, and has brought matters which have been under discussion to such a position that international public opinion must eventually bring about, in one shape or another, the full results aimed at."

In estimating the value of this opinion it must not be overlooked that it is a formal report of men responsible to their government for every statement in the paper. The Report adds this significant sentence: "No power which has participated in the conference can hereafter maintain that its obligations cease with the adequate protection of its own subjects from noxious drugs; it is also pledged to help its neighbours as far as may be practicable to the same end."

The spirit of this is a great advance on that which brought on the opium wars of 1841 and 1858.

Since the Opium Conference the Chinese have been struggling bravely with their problem, and the cultivation of opium has been pretty well stamped out in some provinces, while in others, through lack of zeal or dishonesty on the part of officials, the progress has not been so marked.

In 1907 the British government offered to reduce the export of opium from India by 5,100 chests a year till 1910, and that if the Chinese government reduced the production in China in the same proportion, the British government would continue the arrangement until both export from India and production in China were extinguished in 1917. This was

agreed to by China and Great Britain has adhered to it, although it is somewhat doubtful if the Chinese government, in spite of apparently honest efforts, has succeeded in reducing the production at the rate agreed upon. The difficulties of the task are enormous. To eradicate a vice from a population estimated at 400,000,000 is a formidable undertaking, even were the habit confined to one class. But it is greatly increased by the fact that it has spread through all classes, being the chief national "stimulant." Then there is the loss of revenue, which must be made up by other taxes. The cultivation of the poppy is more profitable than any other crop, as an acre yields dry opium worth \$29 as against \$21 for a grain crop.

Another difficulty faces the Chinese in their struggle with this enemy. Both in China and in India the use of morphine, cocaine, etc., instead of opium is an increasing danger. Most of the morphine is made in England and Scotland. It is exported to Japan and goes into China by way of Manchuria. Prohibition of its importation into China was agreed to by Great Britain in 1909; but on account of its small bulk, smuggling (in letters and other innocent-looking packages) is comparatively easy.

In 1912 Great Britain, at the request of China, agreed to an earlier completion of the joint extinction of importation and home production of opium. The Chinese government ordered the destruction of standing crops of poppies, but through connivance with the troops sent to carry out this order the poppies in many cases were spared and yielded their opium.

Doubtless all this effort is educating the population of China to recognize the danger to which the opium habit exposes the nation, and we may expect at least the same rate of progress towards total abstinence from opium in China as is seen in Europe and America in the case of alcohol, which Ex-Premier Clemenceau, in a pamphlet which was some time ago laid before the Paris Academy of Medicine, characterizes as "the most formidable enemy of social peace, of general welfare, and of the rise of the humbler classes to a higher life."

W. L. GOODWIN.

MECHANICAL MEASUREMENT OF TIME.

THE REMONTOIRE AND THE GRAVITY ESCAPEMENT.

The function of the clock train is to transmit the power of the driving weight or spring to the scape wheel with absolute uniformity. But no train does so. The best of trains have their imperfections, and the more numerous the wheels in the train the more obvious the imperfections become. Hence it has been proposed to use not more than two wheels in the train. But such a construction involves the use of very large and cumbrous wheels, or very frequent windings, both of which are objectionable.

If the power transmitted to the pendulum through the scape wheel is subject to irregular variations, the action of the pendulum must necessarily be affected thereby in any of the escapements that we have so far considered. And a pendulum thus affected cannot keep accurate time in its oscillations.

Let us suppose then that we have a clock of a single wheel, the scape wheel. On the arbor of this wheel a fine thread is wound and a small but sufficient weight is suspended by the thread. The power transmitted to the scape wheel is now a constant function of this small weight and is absolutely uniform, and the only irregularities that can enter into the action must be due to the escapement itself. The performance of such a clock should be superior to one having a train, however good the train may be. We say the performance, by which we mean the performance while the clock is running undisturbed. But such a clock would need to be wound every hour at least, and would therefore be impracticable, as no one person could give it the hourly attention required. Besides every winding is a more or less disturbing influence, or would be such under the conditions supposed.

Remontoire.

It occurred to somebody—supposed to have been Thomas Reed of Edinboro, early in the nineteenth century—that instead of using the train of the clock to drive the scape wheel directly, it might be used as an attendant to wind up, at stated and equidistant periods, the one-wheel clock now described.

The arrangement by which this is effected is called a *Remontoire*, and particularly a *train Remontoire*. The remontoire has a variety of forms, and although it is not a part of

any escapement, being equally adapted to all escapements, yet it is in many cases a valuable adjunct to the escapement and a beneficial element in the good performance of the clock, as it relieves it from the effects of irregularities in the driving force.

The *spring Remontoire* is the simplest in construction, and we shall endeavor to briefly describe the working of one which is well known to us, and of which a section of the working parts is given in the illustration.

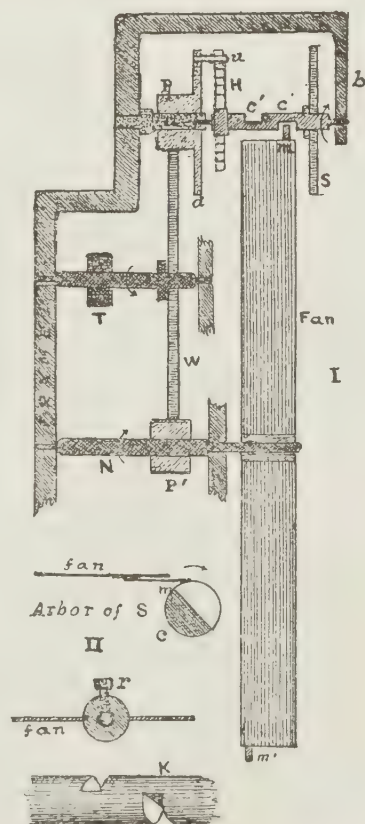
S is the scape wheel with its arbor pivoted in the arm *b* and into the stud *a*. *H* is a flat spiral spring like the hair spring of a watch, but sufficiently heavy for the work which it has to do, and attached to the arbor at the centre. *P* is a pinion riding on the stud *a* and carrying the disc *d*, which by means of the pin *u* is attached to the outer end of the spring *H*. *W* is the last regular wheel of the train, and drives the pinion *P* and an equal pinion *P'* on the shaft *N*. This latter shaft or arbor carries a fan *Fan*. Now it is evident that if *W*, through the train acting on the pinion *T*, is rotated in either direction, both *S* and the fan will rotate in the opposite direction, and with equal velocities.

But if *S* be prevented from revolving, the motion of *W* will wind up the spring *H* which by its tension will tend to revolve *S*.

Now the arbor of *S* is cut one half way through in two places on opposite sides, as shown at *c* in section and at *K* in perspective. And at the ends of the fan are the projecting stops *m* and *m'*, which are so disposed that *m* can pass through *c* and *m'* through *c'* whenever these cuts face towards the arbor of the fan. The stops *m* and *m'* are springs fastened to the fan to take off the shock, as shown at figure II.

Now for the mode of action.

The spring *H* is first set to the proper tension to drive the pendulum by adjusting the fan on its arbor and fixing it in position by means of the pinch screw *r*.



Then the spring will drive the escapement, while the stop *m* resting on the scape wheel arbor will keep the fan, and therefore the train, at rest.

But when the notch *c* comes to face the fan, *m* passes through and allows the fan—which is driven by the train—to make one-half a revolution and bring the stop *m'* to rest on the scape wheel arbor.

This movement winds up the spring *H* through half a revolution, or exactly through the distance that it had run down.

After another half revolution of *S*, *c'* comes to face the fan and *m'* passing through allows the fan to make half a revolution and bring *m* to the scape wheel arbor again, and again wind up the spring. And thus the action is repeated as long as the train continues to drive the fan and wind the spring.

The purpose of the fan is to control the motion of the train while in action, and with a large fan, and particularly a long one, this motion can be made quite slow and uniform.

In the particular remontoire which the writer has in mind in this description, the pendulum is seconds, the scape wheel has 15 teeth, and the fan has a radius of 3 inches. Hence, the winding process takes place and the train moves forwards every 15 seconds.

In regard to this form of remontoire we may draw attention to the following things—

1. The power applied to the train has no direct connection with the escapement, the only function of the train being to wind up the spring *H* through a certain angle—one hundred and eighty degrees in this case—and at periods or intervals of fifteen seconds.

2. No friction need be taken into account other than that in the escapement itself, and this latter may be kept practically constant, so that the force acting to move the pendulum is practically invariable, and thus the principal source of the circular error is absent.

3. Increasing the driving weight has no other effect on the escapement than that of increasing the pressure of the stop *m* upon the scape wheel arbor. But owing to the length of the

fan the friction here is almost infinitesimal, and the slight variation in it, produced by variations in the train, is quite inappreciable.

It is for this reason that the remontoire is of especial value in turret clocks. For owing to the action of wind and rain and snow on the exposed hands it is necessary to have an excess of driving force in the train in order to overcome the great and variable resistance. But all of these are practically without effect upon the escapement, that is without effect upon the time-keeping parts of the clock.

It is true that the tension of the driving spring H is greater when wound up than just before being wound up, but the difference is small, and the conditions are exactly repeated every 15 seconds, so that the disturbing effect upon a pendulum, and especially upon a heavy one, is practically nothing.

In *gravity remontoires* the driving spring H is replaced by a weight. But in all of these—for there are several kinds—the scape wheel is driven, not directly by the weight, but by some intermediate gearing. And the escapement being to some extent subject to the friction and irregularities of this gearing is not as free as in the spring remontoire.

For this reason the spring remontoire is, in the opinion of the writer, superior to the gravity remontoire.

It may here be pointed out that the remontoire is not well adapted to astronomical clocks, as in these the hands should move forwards at the close of every second, instead of at intervals of fifteen or more seconds. And any method of overcoming this difficulty would be apt to introduce sources of irregularity in the action of the escapement. But it is admirably suited to turret clocks, which have no seconds hand, and where the jump of the minute hand every 15 seconds is a decided advantage in reading the time.

The Gravity escapement.

The inventive mind will never be at rest as long as there are new things to be invented, or old ones to be improved upon.

Although the invention of the train remontoire, as the one just described is called, was certainly a noble adance in the science of horology, yet it was not the last word. It seemed

desirable to give the impulse to the pendulum in some way that would insure symmetry in action and invariability in power. And what can we assume to be more constant and invariable in its action than the force of gravity? How then can we apply the force of gravity directly to the work of keeping up the oscillations of a pendulum so that their amplitude may be invariable? This is our problem.

Let P denote a pendulum whereof B is the bob and s the suspension spring. And let ff represent a fixed shelf attached to the top of the rod.

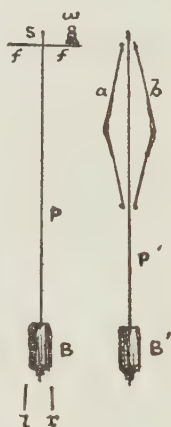
Let l and r be two marks such that in the swing of the pendulum the pointer below the bob will pass over them.

Let us now invoke the assistance of Clark Maxwell's demon, who will place the small weight w on the right shelf when the pointer reaches r , and will shift it to the left shelf when the pointer reaches l , repeating this process indefinitely, and placing the weight, each time, exactly in the same position on the shelves.

Then it is evident that, with sufficient weight, the pendulum would be kept swinging, and that the impulse, depending solely upon the weight of w acting through a fixed distance, would be invariable. And therefore, as far as the impulse was concerned, the pendulum should have an invariable amplitude of swing.

There is no reason why the weight should not take different forms and do its work in different ways, provided it is solely a weight that acts. Thus the pallets represented by a and b , turning on fine pivots at their upper ends and with pins at the lower ends that press against the pendulum rod, would answer the same purpose as the shifting of w , if these pallets could be drawn outward in regular order and to the same distance each time, and be then allowed to fall back with the pendulum through a constant arc.

In carrying out these operations the only demon that we can call to our aid is the train of the clock, and we must so arrange matters that the only work that the train has to do is to manage in regular order the motion of the pallets.



In the illustration the pendulum is shown with its suspension spring and chock at the top, and is broken away for a space in the middle in order to show the scape wheel.

The pallets *P* and *Q* swing on very fine pivots at *c* and *c'*, so as to reduce the friction to the smallest possible amount, and they are of the form here shown.

The arms *m* and *n* are permanent and important parts of the pallets.

The pallets contain stops at *s* and *t*—*s* projecting backwards and *t* projecting forwards.

In the scape wheel are eight equi-spaced pins, the four shown as black dots projecting forwards, and the four shown as open circles projecting backwards.

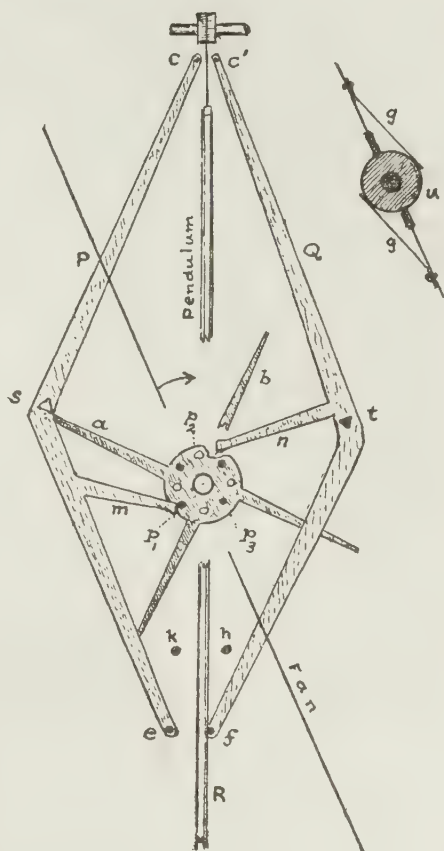
This wheel has also four long teeth reaching out to the pallets, as shown. The pins *k* and *h*, called banking pins, project forward from the frame work, and against these the pallets rest when at the limit of their fall, and *e* and *f*, at the feet of the pallets, are pins by which the pallets give the impulse to the pendulum.

Now let us consider the action.

The scape wheel is propelled by the train in the direction shown by the arrow, but it is held at rest by the tooth *a* resting against the stop *S*, while at the same time the pallet *P* is prevented from falling, or moving inwards, by the arm *m* resting against the pin *p*₁.

Now the arm *n*, where the scape wheel is broken away to show it, does not reach to the pin *p*₂, so that the weight of *Q*, through the pin *f*, tends to move the pendulum from right to left.

As the rod *R* moves to the left the pallet *Q* follows the pendulum until it is stopped by the pin *h*, and the pendulum moving onwards a little pushes the pin *e* outwards and re-



moves the stop s from the tooth a . This movement also draws the arm m out of the way, so that the pin p_1 can pass, and thus the scape wheel is free to rotate.

In this rotation the pin p_2 meets the arm n and pushes the pallet Q outwards until the tooth b comes to rest on the stop t , while the pin p_2 in its new position rests against n and keeps Q from falling inwards.

In the meantime e remains in contact with R , falling inwards with the pendulum, and giving an impulse by its weight, until the pallet P comes to rest against k . And thus the action is repeated by the pallets alternately.

Remarks.

1. As the pallet P is raised, by the train, from contact with pin k to its present position, with a tooth resting on stop s , so it gives its impulse by falling from its present position to its position of resting against k . For, any motion of the pendulum to the left after the rod touches the pin e can be left out of account, as the pallet then moves outwards and inwards again as a part of the pendulum. And hence the fall of the pallet, in giving the impulse, is constant, or the weight falls through a definite distance.

2. While the pallet is falling and giving the impulse it is absolutely free from all connection with the scape wheel and the train, so that the impulse, being a constant function of the weight of the pallet only, is invariable in force. And thus the condition, with which we set out, of applying the force of gravity only and directly to the work of keeping a pendulum in oscillation, is satisfied.

The principal force of friction is in the letting-off of the teeth from the stops s and t , but on account of the length of the teeth a , b , etc., and the slight distance that they overlap the stop, this friction is quite insensible.

The only effect of increasing the weight or driving power is to slightly increase the pressure of the teeth on the stops s and t ; and to increase the velocity at which the scape wheel moves when released from a stop.

In order to prevent the too rapid motion of the wheel, a fan, as long as can be conveniently worked in, is attached to the scape wheel arbor. This fan rides loose upon the arbor, and is driven by the friction of the springs g , g which press

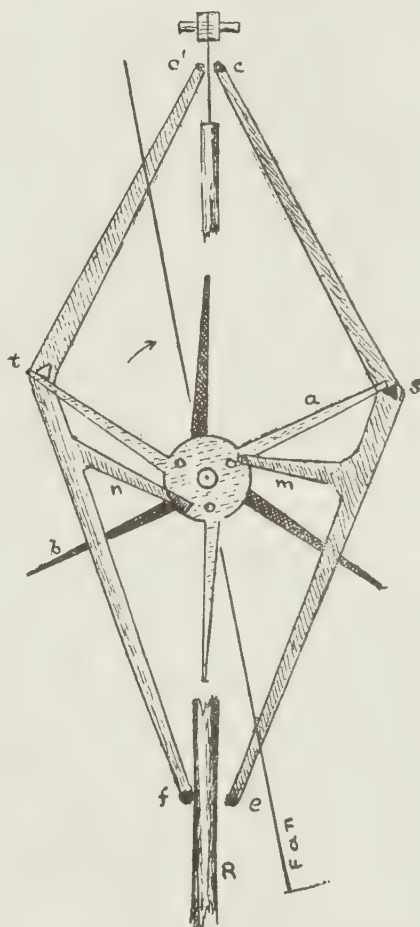
upon the periphery of the drum *u*, it being fixed rigidly to the arbor.

The escapement just described, which is probably the best in existence, if not the best that can be employed, was invented by Sir Edmund Beckett, formerly Edmund Beckett Denison, and is commonly known as *Denison's four-legged gravity escapement*.

He invented also a gravity escapement in which the scape wheel has six teeth, or rather the scape wheel consists of two wheels of three teeth each. This escapement involves the same principles in its action as the other, but possesses some peculiarities of construction which make it simpler in form and possibly somewhat more efficient in action.

This escapement is known as the *double three-legged escapement*, and is figured in the illustration.

The two scape wheels, the nearer represented in light shade and the other in dark, are situated upon the same arbor at a sufficient distance apart that the pieces *m* and *n* may readily pass between them, and the three pins, denoted by small open circles, pass from one wheel to the other.



The stops are *s*, which projects forwards and acts as a check to the front wheel only, and *t* which projects backwards and checks the hind wheel only.

When *a* escapes from the stop *s*, *b* falls on the stop *t*, and the movement of the wheel is through 60 degrees at each swing of the pendulum, instead of 45 degrees as it is in the four-legged escapement.

This is thought, in some respects, to be an advantage. But on the other hand, with a seconds pendulum, the scape wheel would make a complete revolution in 6 seconds, while in the four-legged escapement the wheel would require 8 seconds for

one revolution. So that it requires a rather longer train for the double three-legged than for the four-legged escapement.

On account of the perfection in form and principle entering into these escapements, through which they are totally independent of imperfections in the train and variations in the driving power, they have become great favorites in the horological world.

Of late years, especially, every standard astronomical clock has a gravity escapement, usually the four-legged; while the double three-legged is thought to be better adapted to large turret clocks, where the exposure of the dials to the vicissitudes of the weather requires much more driving power than would be the case if everything were enclosed, and where a greater motion in the scape wheel is thought to be desirable.

To give some idea of the perfection of these clocks as time-keepers, especially where the pendulum is of the best quality, we may refer to the action of the largest clock built on this principle in Great Britain, the clock known as Big Ben on the Houses of Parliament at Westminster.

This clock has been most carefully "timed" by astronomical observations, and the average variation of its rate of running is only two-tenths of a second daily. A greater degree of perfection than this is too much to hope for.

The detached escapement. In the gravity escapements as now described the pendulum picks up one pallet just as it leaves the other, so that in no part of its swing is it free to move without being accompanied by an attendant pallet, which, in a way, shadows it in all its course. It has not been proved that this is an evil, but on the other hand it has been shown that the pendulum probably acts better under these conditions than under any other.

Nevertheless, some people have thought that it might be better to leave the pendulum free to swing without any encumbrances whatever except when receiving its impulse. And this thought has given rise to what is called the detached escapement.

Historically, the detached escapement preceded the gravity one, or possibly no person would have thought of trying to improve upon the latter. But as the detached escapement has been employed and is still employed to a certain extent—the

writer has one running in a hall clock—it may be well to take some notice of it here.

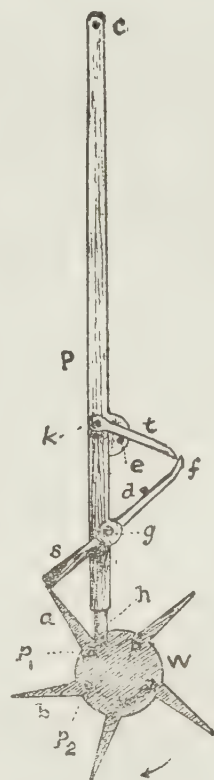
There have been several forms of detached escapement invented and constructed, but as they act very much on the same principle, the description of one must suffice for all.

In the illustrative figure *P* is the single pallet, which is attached to the pendulum in some way, or may itself be made a part of the pendulum rod.

The scape wheel *W* has 5 pins, and 5 long teeth. The piece *sf* is made with the *s*-end somewhat heavier than the *f*-end, so that when in normal position it rests against the pin *d* which is fixed in the frame of the clock, and it turns upon the pin *g* which is also fixed in the frame.

The piece *t* is made very light and turns on a very small pin *k* and rests against the pin *e*, both pins being fixed in the pallet.

The action is as follows: The wheel *W* is prevented from turning by the tooth *a* resting against the stop *fs*. But as the pallet, or the pendulum, moves to the right the piece *t* pushes *f* out of its way and thus releases the tooth *a*, so that the wheel is at liberty to revolve.



But the pin *p*₁ falls against the hardened piece *h*, and thus gives an impulse, until it escapes from *h* on the other side of the centre, and the tooth *b* falls upon *s*. In the return swing to the left the only occurrence to disturb the free motion of the pendulum is the tripping of the catch *t* over *f* as it *passes*. But this is so slight and of such short duration that it may practically be ignored. Thus the pendulum may be said to be quite free from all forces except that of gravity during one swing and subject to a short impulse during the other.

Of course the train moves only at alternate swings, so that with a seconds pendulum the clock would “beat” every two seconds.

Although this escapement gives good satisfaction under favorable circumstances, it has the obvious fault of being influenced by a variation in the driving force to even a greater extent than Graham’s dead beat. For as there is nothing,

practically, to check the swing of the pendulum, the amplitude of the oscillation is increased by every increase in the impulse, and almost in proportion to the latter. And as the arc of the swing is thus subject to variations, the circular error must generally interfere with accurate timekeeping.

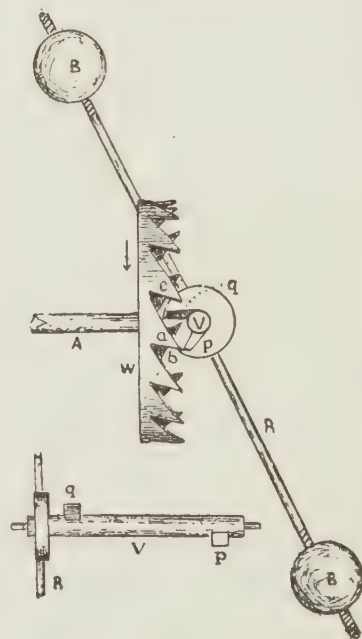
Going back some six hundred years we come to consider the form and action of the escapement of DeWyck's clock, and other clocks of his time.

The consideration of this escapement is taken up here because it is old and yet comparatively modern in its application. It was in use before the invention of the pendulum, and it is only a few years since it was in very common use, not with a pendulum—for it is not well adapted to this governor—but with the *balance*, in the old English "bull's-eye" watch. So that this escapement, which has now pretty well passed out of use, in time-pieces at least, is a sort of a connecting link between those of the fixed clock and those of the portable clock, or watch.

In the accompanying illustration *W* is the scape wheel, always with an odd number of teeth, and the arrow shows the way in which it turns. The wheel is somewhat like a crown, and the teeth in the lower part of the rim are shaded in order to make matters clearer.

The pallets are *p* and *q*, fixed upon the axis *V* at a distance apart equal to the diameter of the wheel, as represented in the smaller figure.

R, with the weights *B*, *B*, is a beam balance. The tooth *a* has just escaped from the pallet *p*, and the tooth *b*, on the other side of the wheel, is just coming into contact with pallet *q*. There will be recoil, of course; but as the balance swings backwards, under the influence of the pressure of *b* upon *q*, *b* finally escapes from *q*, and the tooth *c* falls upon *p*, and the balance is kept oscillating.



In DeWyck's clock the axis V was vertical, and the balance oscillated in a horizontal plane. The weights $B B$ were hung on the beam and kept in place by notches. Regulation was effected by moving the weights outwards to make the oscillations slower, and inwards to make them more rapid.

In time a hair spring was added to regulate the oscillations, and the weights were threaded on the beam, a change that admitted of the balance oscillating in any plane. And by adding the hair spring and replacing the beam balance by a ring balance we have the escapement as employed in the old English "bulls-eye" watch, commonly called the verge escapement.

If the axes A and V be both horizontal, and only the lower half of the beam be used, we have an escapement, in which the pendulum has a pretty large arc, on account of the shortness of the pallets. But in all cases the impulse is given fairly well across the line of centres, so that the friction is less than one would suppose it to be.

N. F. DUPUIS.

THE GRANGE IN CANADA.

FOREWORD. The following sketch is intended to be merely an outline of the history of the Patrons of Husbandry in Canada. As indicated hereafter, much of the history of the Order is of such a personal character that no good purpose would be served by reviewing old disputes and controversies, which are by now almost forgotten, and which will soon doubtless vanish into a kindly oblivion. I shall, however, hope to treat certain aspects of the movement more fully hereafter in an extended history of the various political and social organizations among the farmers in Canada—the Grange, the Patrons of Industry, the Farmers' Association, and the Grain Growers' Movement in the West.—H. M.

FOUNDING OF THE ORDER.

The idea of founding a secret order modelled more or less on the pattern of such societies as the Free Masons and Odd-fellows, but confined exclusively to agriculturists, would seem to have sprung, like Minerva from Jupiter, from the brain of Mr. O. H. Kelley, a clerk in the Department of Agriculture at Washington. Sent in 1866 on a tour through the Southern States of the Union, in order to report on conditions prevalent in those parts after the Civil War, he came to the conclusion that the best way to deal with industrial depression and decay consequent on the social upheaval would be the founding of a national secret order of farmers, which would foster a corporate feeling among those engaged in agriculture and advance their common aims and objects. He managed to interest six other friends in Washington, all civil service clerks, and this band of seven hardy pioneers formed themselves, in December, 1867, into the National Grange of the Patrons of Husbandry, "Grange" being the name of the Order, while the title Patrons of Husbandry was bestowed on the individual members. We will not follow the history of the intrepid Kelley in his early struggles to advance his idea; suffice it to say that progress at first was very slow, in fact hardly any headway was made at all until 1870, when the order began to extend a little in the states of Minnesota and Iowa. Soon, however, the ball began to roll, and by May, 1873, there were 3,360 Granges in the United States, mostly in the North Central district. From then on the progress became startling, thousands of Granges

being added almost every month, and the Order reached the zenith of its power and popularity in 1875, when the astonishing number of 21,697 Granges with 758,767 members were in existence. Having reached the crest of the wave it quickly declined, in eighteen months 5,500 Granges ceasing to exist. During the later eighties a recrudescence of the order took place, and after many ups and downs the order is still fairly vigorous in many localities of the United States.

FORM OF ORGANIZATION.

As has already been said the name Grange was given to the order as a whole while the members were termed Patrons of Husbandry. The unit was the local lodge called "Subordinate Grange." Representatives of the Subordinate Granges formed the State Grange (in Canada "Division Grange"). The State Grange only existed as a separate entity when summoned in session by the Master. Representatives from the State Granges made up the National Grange ("Dominion" in Canada) which met in annual session to legislate for the good of the whole order.

The Grange is unique in being the only secret order in which women are admitted. There are seven degrees, of which the first four are open to ordinary members of the subordinate Granges, the fifth to members of State or Division Granges, and the sixth and seventh only to members of the National or Dominion Granges. The various degrees are:—

- 1st. Labourer (man), Maid (woman).
- 2nd. Cultivator (man), Shepherdess (woman).
- 3rd. Harvester (man), Gleaner (woman).
- 4th. Husbandman (man), Matron (woman).
- 5th. Pomona (Hope) (men and women).
- 6th. Flora (Charity) (men and women).
- 7th. Ceres (Faith) (men and women).¹

¹ In America the Seventh Degree was made into an esoteric circle whose members styled themselves "Priests of Demeter." This does not seem to have penetrated to Canada. Much agitation was conducted against the higher degrees by members of subordinate Granges, and they were thrown open to all "whose garments were clean."

The ritual is simple, and may be made dignified, the teaching conveyed to the aspirants to the various degrees being of a very simple character.² The Labourer is instructed that all honest labour is honourable, and that he must "drive the very ploughshare of thought through the heavy soil of ignorance, and thus prepare the mind for the growth of knowledge and wisdom."

Advancing one degree he becomes a Cultivator, "when his moral nature is educated and refined by repeated assurances that he who intelligently cultivates the growing plant is brought into close companionship with his Creator." And he is instructed by the Ritual, "As we see the beautiful transformation of seeds into attractive plants, we have but another lesson taught us of the wondrous works of God; and if the beauties of this world, when rightly viewed, offer so much of the magnificence of the Creator to charm us here, what must be the sublime grandeur of that Paradise above not made with hands, eternal in the Heavens!" And so on and so forth in interminable platitudes.

OBJECTS OF THE ORDER.

The Preamble to the Constitution is a very interesting document, but is too long to be printed here in full.³ Beginning with the complacent assertion that "Human happiness is the acme of earthly ambition," it goes on to the even less arguable pronouncement, "The soil is the source from whence we derive all that constitutes wealth; without it we would have no agriculture, no manufactures, no commerce. Of all the material gifts of the Creator, the various productions of the vegetable world are of the first importance," and so on.

The motto of the order is: "In essentials, Unity; in non-essentials, Liberty; in all things, Charity," while the objects of the order are entirely praiseworthy:—

To develop a better and higher manhood and womanhood among ourselves.

²The Grange, by D. Wyatt Aiken. Philadelphia, 1884.

³This Preamble is quite famous, it having been copied, more or less ungrammatically, by numerous other ephemeral orders, such as the Farmers' Alliance and the Agricultural Wheel, both in the U.S.A. The Patrons of Industry also drew largely on it.

To enhance the comforts and attractions of our homes; and strengthen our attachments to our pursuits.

To foster mutual understanding and co-operation.

To reduce our expenses, both individual and corporate.

To buy less and produce more, in order to make our farms self-sustaining.

The discontinuance of the credit system, the mortgage system, the fashion system, and every other system tending to prodigality and bankruptcy.

We propose meeting together, talking together, working together, buying together, selling together, and in general acting together for our mutual protection and advancement as occasion may require.

For our business interests we desire to bring producers and consumers, farmers and manufacturers, into the most direct and friendly relation possible. Hence we must dispense with a surplus of middlemen; not that we are unfriendly to them, but we do not need them. Their surplus and their exactions diminish our profits.

We are opposed to excessive salaries, high rates of interest, and exorbitant per cent. profits in trade. They greatly increase our burdens, and do not bear a proper proportion to the profit of producers.

We emphatically and sincerely assert the oft-repeated truth, taught in our organic law, that the Grange is not a political or party organization.

Such are a few of the more striking clauses in the Declaration of Principles of the Dominion Grange. It may be truthfully said that whatever other rocks may have lain in the path of the Grange and on which the order struck, the Grangers always managed to steer clear of the greatest danger of all, participation in politics, the rock on which the Patrons of Industry foundered in 1895.

The officers of the order are thirteen in number, presided over by the Worthy Master, and including Overseer, Secretary, Treasurer, Lecturer, Chaplain, Steward, Assistant Steward, Gate Keeper, Lady Steward, and three highly ornamental lady officers termed severally, Ceres, Pomona, and Flora.⁴

⁴The best account of the Grange in the United States, up to 1880, is by Dr. S. J. Buck, entitled "The Grange Movement," and published by the Harvard University Press. I am indebted to this volume for statistics of the movement in the U.S.A. Practically nothing has been published concerning the movement in Canada, except an article in Castell Hopkins' Encyclopedia of Canada, by Mr. H. Glendinning. Miss H. Robinson has written a couple of articles in the Farmers' Magazine recounting early recollections of the movement. Early files of the "Farmers' Advocate" and the "Farmers' Sun" contain much scattered information.

PLANTING OF THE GRANGE IN CANADA.

The first step taken by the Grangers in the United States to extend the order to Canada was in 1872, when a Mr. Eben Thompson was deputed by the master of the National Grange to organize Granges in the Province of Quebec. Thompson was successful in founding eleven, the first being "The International" at Stanstead, Quebec; others following shortly afterwards at Dixville, Danville, Frelighsburg and Dunham, all in the same province, the first in Ontario being at L'Orignal. It is, however, of interest to note that the order did not then, nor subsequently, flourish in the Province of Quebec, and the early Granges organized by Thompson, although some of them had a seemingly large membership, almost instantly subsided, in fact some of them never met in session at all. Thompson's efforts were seconded by Mr. J. F. Cass, who was made a deputy, and was successful in organizing the twelfth Grange, named "Winchester," at Cass Bridge, Ontario.⁵

These efforts occupied the years 1872-3, and in 1874 Eben Thompson's commission as deputy for Canada expired, and on his petitioning the National Grange for an extension he was refused by the master, Mr. Adams. This rebuff did not, however, deter Thompson, and he returned to Canada as a free-lance determined to carry on the work himself. Proceeding to London, Ont., he called on Mr. Wild, editor of the "Farmers' Advocate," and explained to him that ten Granges were already organized and in full working order in the Dominion, and that the Executive Committee of the National Grange had agreed that as soon as fifteen subordinate Granges were organized a Dominion Grange would be established, financially independent of the National Grange in the United States; there would seem to be some doubt as to whether this promise was actually given in a formal and authoritative manner.

Mr. Wild, struck by the idea of the Grange as an organization likely to be of benefit to the farmers, agreed to help Thompson, both personally and through the press, and the work of organizing Granges went forward, although slowly,

⁵History of the Grange in Canada. By members of the Dominion Grange. Toronto, Belford Bros., May, 1876. Paper Wrappers, pp. 32.

the insuperable difficulty in the way of rapid expansion being the fact that the Canadian movement was still subordinate to the National Grange and all quarterly dues and organization fees were accepted by the head office and dispensations granted in due form, although Eben Thompson was an unaccredited agent.

In the spring of 1874 fifteen Granges had been organized, and a letter was addressed to the National Grange reminding the Executive Committee of their alleged promise, and demanding the inauguration of a Dominion Grange. This letter was never answered, and the Canadian Grangers became alarmed. The first step at asserting independence was made by Mr. Thomas of Forest City Grange, who on May 23, 1874, invited all Masters, Secretaries, and Lecturers to meet at the rooms of the Grange in London. On June 2, twenty-five delegates assembled and thereupon proceeded to inaugurate the Dominion Grange, with Mr. S. W. Hill of Ridgeville as Worthy Master, and I. W. Dyas as Secretary.

Having taken the initial step the convention then adjourned to meet again on June 3, when a Constitution and By-laws were agreed to, and a Declaration of Principles drawn up and published, and the first annual convention fixed for September 22, when the officers elected and two delegates from each subordinate Grange were to meet at Toronto. At the meeting on June 3, no idea of complete separation from the National Grange seems to have been suggested, and a resolution was passed acknowledging the National Grange as the parent institution, and looking to it for guidance in organization. So far all had been plain sailing, but when the meeting was over troubles began. There was no money in the treasury, and the secretary had much on his shoulders, printing to be done, and organization to be put forward. But more serious than that was the open revolt of several of the subordinate Granges, led by the Georgian Grange at Meaford, which repudiated the action of the delegates and refused to acknowledge any organization but the National Grange at Washington. These difficulties were met by the secretary bearing the expenses, which were considerable, out of his own pocket, and by the tact and excellent generalship of the Dominion Master, Mr. Hill, who succeeded in pacifying the recalcitrants.

All trouble was, however, not yet over, and the next move came from the National Grange, which, having ignored the notice sent to it announcing the formation of the Dominion Grange and praying for recognition, suddenly dropped a bomb in the Canadian camp by sending a circular to the subordinate Granges ordering the Masters to meet the Master of the National Grange at London, on August 18, 1874, in order to form a State Grange for Canada. Something like a panic was caused among the Dominion Grangers at this counter attack, and a letter was sent to all subordinate Granges on August 11, apprising them of the fact and saying that matters had gone too far by then for any notice to be taken of this summons, and the Executive Committee was convened to meet also at London on August 18 in order to meet the invaders.

The Master of the National Grange and of the Michigan State Grange arrived on time, but only one Master from Canada met them,⁶ and the meeting was a fiasco, no State Grange being organized. We are told, however, that all was peaceful, and so far from a clash following with the entrenched Executive Committee of the Canadian Grangers, indeed "In order to show that there was no ill-feeling, the Executive Committee invited the Master of the National Grange and his colleague to lunch, and all parties separated in good humour."

On September 22, as arranged, the first regular annual convention of the Dominion Grange of the Patrons of Husbandry met in Toronto, 73 delegates being present. The proceedings were of an unanimous and enthusiastic description, all internal strife being at an end. Forty-four subordinate Granges were in existence, with a total membership of 235. Two Division Granges had been organized, namely the London and the Grey, and the secretary reported \$240 in the treasury.

The question of recognition by the National Grange was anxiously debated and Mr. S. W. Hill was deputed as delegate

⁶Unfortunately the name and Grange of this hardy master has been lost. It seems, however, that all the Granges in Canada were not gathered into the Dominion fold, a few in Quebec acknowledging the National Grange to the end of their somewhat brief existence. Six were reported in 1876 as still in connection with Washington, but they seem to have dissolved soon afterwards. All the early records are very uncertain on the point.

to the annual meeting of the American Order. His mission did not succeed, for, although received with kindness and courtesy, there was a strong party among the American Grangers opposed to any recognition of the Canadian Order as a separate entity, and all efforts at recognition were defeated.

The second annual meeting of the Dominion Grange was held in Toronto, October 27-29, 1875, when 62 delegates were present. The growth of the order had been rapid, the secretary reporting 22 Division Granges, 247 subordinate, and total receipts for the year of \$4,662. Mr. Chase, Master of the New Hampshire State Grange, was present, and on his return to the States threw his influence into the movement for recognition.

The ninth session of the National Grange was held in Louisville in November, 1875, and the Committee on Foreign Relations presented a long and remarkably bombastic report⁷ recommending full recognition of the Dominion Grange, and the discontinuance of the issuing of dispensations by the National Executive. This was agreed to and since then the Dominion Grange has always ranked as a sister body, sending its Master to the annual sessions of the National Grange.

RISE AND DECLINE OF THE GRANGE IN CANADA.

The increase in the number of Granges organized in Canada from 1875-6 to 1885 was certainly phenomenal. In 1876 there were 33 Division Granges and 530 subordinate, in 1879, 51 and 766 respectively, while the secretary computed the total membership of the order at over 31,000. In 1886 there were reported 56 Division and 921 subordinate Granges. But beneath these figures lay a deadly paradox. The course of the Grange was like a prairie fire sweeping across the country, blazing up and as quickly dying down. A careful perusal of the published lists of Granges will reveal that never at any time were more than three hundred Granges actually in full working order; the rest had become extinct shortly after inauguration. It may also be computed that the average life of

⁷The pompous turgidity of most of the resolutions of the State Grange, couched in quasi-scriptural language, is quite prostrating to the ordinary reader. It must, however, be acknowledged that the Dominion Grange generally managed to express itself with some degree of conciseness.

the vast majority of the subordinate Granges was two years, many but a few months, while others died at birth.

While year after year the secretary was announcing mighty numbers and great advances, a far more accurate and less flattering tale was told by the yearly receipts of the treasury. In 1877 the total receipts amounted to \$7,562 and in 1885 had fallen to \$1,055, and in that year the secretary congratulated the Dominion Grange on the magnificent position of the order in Canada. From 1888 onwards the decline was very rapid, as the following figures will show:—

<i>Year.</i>	<i>Division.</i>	<i>Subord.</i>	<i>Treasury.</i>
1890	21	100	\$560
1895	12	70	424
1902	8	34	126
1906	5	32	134

In the last year the total number of members of the order was 446. Since 1906 no figures have been issued, but a slight increase was registered by the amalgamation of the Grange with the Farmers' Association⁸ in 1906, and in 1909 there were \$1,022 in the treasury. Since 1909 no annual reports have been issued. During the whole history of the order there were organized at one time or another 57 Division Granges, 976 subordinate, 2 provincial (Ontario and Maritime Provinces), and one Dominion, making a grand total of 1,036 separate Grange organizations in the Dominion.

DISTRIBUTION OF THE ORDER.

Although originally started in the Province of Quebec, the Grange was always overwhelmingly an Ontario order. During the course of its existence there were organized the following number of subordinate Granges:—

Ontario	821
Nova Scotia	85
Quebec	23
New Brunswick	21
Manitoba	22
Alberta	2
British Columbia	2

⁸A short-lived effort to collect the scattered members of the Patrons of Industry.

QUEBEC.

Although the birthplace of the order, the Province of Quebec never had an extensive or lasting organization, in fact there were no Granges in existence by 1882.⁹ It is possible that the secession from the National Grange was the reason for this lack of support.

MANITOBA.

In Manitoba a fairly vigorous organization was carried on for many years, old Patrons who had emigrated from Ontario bringing their order with them. The first to be founded was at High Bluff, in 1878, and later in the same year the Burnside Grange was inaugurated at Portage-la-Prairie. In 1887 a Division Grange was organized, named the "Victoria," and was kept going until 1906, when the order was, with one exception, finally extinguished in the province. It is interesting to note that the last four faithful Granges to keep in active connection with the Dominion Grange right down to 1906 were at Carberry, Florenta, Wellwood, and Gladstone, the last to expire being the "Union" at Florenta which finally dropped out in 1907.

In Alberta two Granges were organized in 1907, both at Morningside, but after a few months existence these also vanished. In British Columbia two Granges were also founded, one in 1883 and the other in 1908.

THE GRANGE IN THE MARITIME PROVINCES.

The total number of Granges in the Maritime Provinces were:—

<i>Province.</i>	<i>Division. Subordinate.</i>	
Nova Scotia	4	85
New Brunswick	3	21

The order never penetrated to Prince Edward Island, nor flourished to any extent in New Brunswick.

⁹This statement is open to contradiction. No mention is made of any Granges being in existence in the Dominion Grange Report for 1882. It is possible, however, that as in Nova Scotia a few Granges existed, unattached to any organization.

The first subordinate Grange was organized at Onslow in Colchester County in the summer of 1874, by a deputy sent from Toronto, and Colonel Wm. Blair organized in the same year six in Colchester County and later others in Kings, Hants, Cumberland and Annapolis counties. The order spread slowly and reached its height in 1887 when the Maritime Provincial Grange was inaugurated, such an organization being found necessary in view of the expense in sending delegates to the Dominion Grange.

The cause of the downfall of the order in Nova Scotia was the same as wrecked the Grange all over the Dominion, namely, the failure of the Wholesale Supply Co. The Nova Scotia Granges had been buying largely from the Wholesale Supply Co. in Toronto, but owing to the distance and also owing to many complaints as to orders badly filled, it was agreed to open a branch in Halifax in 1887. About nine thousand dollars were subscribed by Grangers in the Maritime Provinces on the understanding that a branch should be opened, and kept open. Suddenly in 1889 the branch was closed and a demand made on the shareholders for the remainder of their unpaid subscriptions for stock. This was a staggering blow, but the demand was successfully resisted on the plea of breach of contract on the part of the directors in not keeping the branch open in Halifax. The whole of the money paid up was, of course, lost, and the Grange never recovered from it, losing every semblance of prestige in the community. It struggled on until 1894 when it finally collapsed. A few scattered Granges are still in existence, owning allegiance to no one, and conducted more or less as farmers' clubs.

THE GRANGE IN ONTARIO.

The Province of Ontario, although not the birthplace of the order in Canada, was yet always the stronghold, presenting in fact the impression of an Ontario order with offshoots in other provinces. As has already been said, the first subordinate Grange was inaugurated at L'Orignal, but the counties of Grey and Middlesex soon became the strongest territories of the order. From London the order spread rapidly all over Western Ontario, and it has always been in the western portion of the province that the order has had its greatest support

and most lasting success, although, of course, it spread all over the province from east to west.

The Ontario Provincial Grange instituted in 1882 came to an untimely end in 1887. It is difficult to understand exactly the motives which led to the founding of this entirely superfluous organization. The Dominion Grange, already overwhelmingly representative of the Province of Ontario, was amply sufficient to supply all needs. Doubtless a desire to emulate the State Granges of the United States was at the bottom of it. Its course was a short and a merry one. It is almost beyond belief that the funds of the organization should have been dissipated with such recklessness, but in 1884 no less a sum than \$1,276 was paid out as "sessional indemnity" to members of the Provincial Grange. From this extravagance it never recovered, and by 1886 the treasury was almost depleted, and by 1887 the Provincial Grange had to face bankruptcy or absorption by the Dominion Grange. The latter alternative was naturally chosen and this entirely unnecessary and ill-judged experiment was closed forever.

COMMERCIAL VENTURES OF THE GRANGE.

The Grange, after its mushroom and wholly unstable growth in early years, settled down to a steady membership of some four to five thousand Patrons, organized into about two hundred subordinate Granges. Had the order received no disasters from within there can be little doubt that a revival might have taken place between 1890 and 1900. But such was not to be. Blow after blow shattered the order and left it a little band of faithful men resolved to see it through to the end. Practically the leading tenet of the Grange was "co-operation," as the manifesto states, and in order to carry out their principles the Patrons organized four companies in all, namely, The Dominion Grange Mutual Fire Insurance Co., the Grange Trust, the Grange Wholesale Supply Co., and the Ontario Peoples' Salt and Soda Co. Of these, the first three brought irremediable disaster to the order, the last alone achieving any permanent success, and being still in operation.

The Grange Fire Insurance Company was organized in 1876 and finally failed in 1894, although in 1887, owing to disputes between the manager and executive of the Dominion Grange,

all connection between the Company and the Grange had ceased. In 1885 it had two branches and the total at risk was over seven and a half million dollars, more than double the amount of any purely mutual insurance company in Ontario. Extravagant management and internal dissensions ruined the company. The Grange Trust Company was organized in 1878 and failed in 1887. Its nominal capital was \$1,000,000, of which over \$100,000 was paid up. Its prospectus describes it as a "Co-operative Farming Co.," its object being, "to obtain home and foreign capital at the least possible cost, investing it with our brethren, and others, at the current rates of interest, the profits going back to them on the co-operative principle." By 1882 the company was not doing well, and the annual report of the Dominion Grange for 1884 reported mismanagement of affairs of several years' standing. An attempt to obtain capital from the English wholesale co-operative companies did not succeed, and the company went out of business.

The Grange Wholesale Supply Co. was an attempt at supplying members of the order with all kinds of goods, more or less in a co-operative manner, although it must be remarked that the Patrons never understood and never practised the real tenets of the co-operative system. The history of this venture is an interesting one. It was started by a group of Patrons in the county of Lennox and Addington clubbing together in the spring of 1875 to bring in a band of 160 farm hands from the old country. The venture was a success, and the same group in the following year co-operated in the storage, shipment and sale of 300,000 bushels of barley and 5,000 bushels of oats, peas and rye. This venture also being a profitable one, the "Grange Co-operative Company" was started and a store opened at Napanee.

The Dominion Grange now took the matter up and appointed the manager of the Napanee store "Grange Agent" to fill wholesale orders sent him by subordinate Granges for groceries and supplies. These orders he supplied through the Napanee store, and it was soon found that the business was getting too big for it to be handled by the small organization in that town. In consequence the whole business was moved in 1879 to Toronto, and a large company was promoted, with a branch at Halifax, which, however, was afterwards closed, as

has been recounted elsewhere. The Toronto company did a large business, in 1883 the total sales amounting to \$237,158.00, and produce to the amount of \$16,570.00 was sold on account of the Patrons who sent their goods to the warehouse for marketing in this way. The usual quarrels and trouble with managers followed, into which it is needless to go. Law suits against two successive managers found in default, practically wrecked the company, and by 1894 the concern was irreparably damaged and soon after closed its doors.

These failures wrecked the Order, and indeed every attempt at working out any scheme of co-operation only brought discredit on the Grange. When the Co-operative Associations Bill was introduced into the Senate in 1907 it was rejected for no other reason than that the word "co-operation" had acquired a very unsavoury sound, simply and solely through the failures of the Grange.¹⁰

The Ontario Peoples' Salt and Soda Company of Kincardine is the sole survivor of all the enterprises set on foot by the Grange. Its history is one of the greatest interest but is too long to go into here in any detail. Suffice it to say that it was organized in 1882 to combat the Canada Salt Association, which it was alleged by the farmers was keeping the price of salt at an unduly high figure—\$1.00 per barrel. A salt well and salt-making outfit was purchased at Kincardine, and after innumerable difficulties, among which was the digging of a new well and the installation of new machinery, the manufacture of salt was commenced in December, 1884. The price of salt fell from \$1.00 to 60 cents a barrel and the Canada Salt Association dissolved.¹¹ We will not follow the company through all its struggles and its very genuine triumphs. The inevitable quarrels threatened to, but did not actually wreck the company. The numerous and furious broadsheets issued by opposing factions accusing opponents of fraud, mismanage-

¹⁰Out of fairness to legitimate co-operators it must be put on record that the Grange never understood co-operative principles, and used the word co-operative quite unjustifiably.

¹¹It was claimed by the Grange that this was due solely to the Kincardine Company starting work, but this is extremely doubtful. The whole history of the salt industry in Canada is an interesting one, and other factors were at work besides the Kincardine Company.

ment, blackmail, and malicious misrepresentation, afford lively if melancholy reading. However, the warring factions were ejected and the company has pursued an uneventful and peaceful course up to the present day. A brief period of affluence came when the "Patrons of Industry" swept the land in their eventful and short-lived course, and when that movement died away, although much trade was lost, yet the Kincardine Company was left in a sound condition, in which it now is, small but steady dividends having been paid for the last twenty-three years.

An attempt to manufacture soda and chloride of lime in 1896 was a failure, not, it must be said, through any fault of the directors, and although the word "soda" is included in the official name of the company, no soda has ever been produced at the works.

This account of the commercial enterprises of the Grange is, through the exigencies of space, very incomplete. It is certainly a mercy that the losses to the Patrons were not heavier than they actually were. A proposal to manufacture agricultural instruments on a large scale made in 1876 was happily rejected,¹² as was also the founding of a Grange Bank, proposed in 1882. Innumerable little "co-operative" stores were started all over Ontario, and a few in Nova Scotia, all of which in time either failed or became purely proprietary. But although they failed they at least helped to break up the ruinous system of long and usurious credits, then all too prevalent in country districts. If for no other reason, the efforts of the Patrons at co-operation were not wholly in vain.

INFLUENCE ON LEGISLATION.

Although the influence of the Grange in Canada over legislation has in no way approached that which the National Grange has been able to bring to bear in such cases as railway freights, yet its influence has been steady and its efforts un-failing in attempts to ameliorate the conditions of the farming class.

¹²The experiments of the American Granges in manufacturing implements were most disastrous, particularly in Nebraska in 1874, where the failure of the enterprise wiped the order clean out of the state; also in Iowa in 1874-5 heavy losses were sustained. Cf. Buck, pp. 268-69.

In 1878 the Grange was instrumental in having the "Act Respecting Investments in Tile Drain Debentures" passed. This Act has been of great benefit to farmers, providing that a township may borrow a sum of money for the purpose of loaning it out to farmers for the purpose of draining their farms.

In 1879 the Grange was largely instrumental in getting the Provincial Government to appoint the famous "Ontario Agricultural Commission" to inquire into the state of agriculture in the province and which brought in a most valuable report.

But the greatest fight and the greatest triumph of all was that connected with what were known as Market Fees, namely the charging by town councils of fees to farmers for the privilege of bringing their produce to the town market, and also the compulsory weighing of hay and straw. This was an exceedingly vexed question, and in 1882 the Ontario Government agreed to modify very drastically the powers under which the towns could levy these fees, but a strong deputation of mayors from many towns throughout the province having vigorously protested against the bill, it was passed but in a very different form from that agreed upon by the Grange. Against this the Grange protested and was strong enough to get the Act amended in 1883 to suit the views of the farmers to a greater degree than formerly.

In the Report of 1885 we read of the fate of a Deputation that waited upon Sir John A. Macdonald to impress their views on agricultural policy upon him. After recounting the courteous way in which the Premier received them, it goes on to say,—“but beyond a very pleasant time spent in conversation, and a little badinage in which Sir John seemed to take pleasure and an active part, nothing came of it all.”

The Noxious Weeds Act of 1885, providing for the extermination of weeds in the province, was passed at the instigation of the Grange, and subsequent amendments were made, also at the suggestion of the Order.

In 1887 the Grange was instrumental in having a standard size fixed for all salt barrels, and penalties imposed for light weight. An amendment to the assessment law exempting all farm stock from taxation and letting the taxes fall upon the

land, and also an act empowering Mutual Fire Insurance Companies to extend their insurance for a period of four years was passed.

In 1888 legislation making spark arresters obligatory on all steam threshing engines was passed.

Such is the total nett record of legislation obtained by the Grange, a striking commentary on the curiously ineffective nature of the organization as a power in the land.

Of resolutions passed there were an infinity. Innumerable debates were held on such subjects as the total uselessness of the Canadian Senate, and the next to useless character of the Dominion House of Commons. Swinging resolutions were passed to the effect that Canada was "overgoverned," but no practicable alternative was suggested. The school question was perennial, and we came across such resolutions as the following, which was proposed but happily defeated in 1887: "We find that holidays have been extended upon various pretexts until the time devoted to teaching, *if the customary hours of labour are considered*, has become much the smaller part of the year, and would therefore suggest the summer holidays in rural sections be reduced to three weeks time."

Most fortunately the men in control of the Order had their wits about them, otherwise the Grange would have gone on record as advocating some very queer things.

REASONS FOR FAILURE.

The reasons for the failure of the Grange in Canada are not far to seek, and indeed the wonder is that the little band of faithful men who kept the order alive for so many years was able to do so. First among the causes that may be assigned must be named the notorious character of aloofness and lack of the gregarious spirit found among agriculturists all over the world. That this should be so is, after all, only natural, and cannot with justice be imputed to the farming class for dishonour. Every farmer must be, from the very nature of his calling, more or less separated from his kin, and must of necessity "plough a lonely furrow." There cannot possibly be the same cohesion and class consciousness among men living miles apart from each other, as there can be among men living

in more or less intimate relations with each other in a city. The very fact that farmers had to travel sometimes many miles after work hours to attend the meetings militated against the Order. A town worker who need but walk a few hundred yards to his lodge meeting can naturally be in far closer touch with his fraternal society than can the farmer who must drive a long distance, arriving home perhaps at midnight.

Secondly, the disastrous experiments in finance more than anything else ruined the Order. The successive failures of the Grange Trust, the Fire Insurance Company, and the Wholesale Society dealt blows at the Grange from which it never recovered. That the Order ever weathered these successive disasters at all is to be marvelled at, and it speaks volumes for the men at the head that the flag was still kept flying. A vast number of members were added to the Order who joined merely for what they could get out of it, and finding that it was not a get-rich-quick scheme, dropped out and helped to swell the storm of criticism and abuse that beat about the Grange.

Thirdly, internal dissensions broke up all concord in the ranks. It is not the purpose of the present paper to go into the details of these unhappy disputes; the record of them in the annual reports and numerous pamphlets and circulars dealing with them make melancholy reading, and the remembrance of them may advantageously be buried for all time. A few self-seeking men, seeing an opportunity for money making out of the Order, did more to wreck the Grange than any other thing. The whole Order was rent with contending factions, each hurling invectives, insinuations, and open accusations at each other. At one time two "Grange Bulletins" were being published, both of which made a business of vilifying the other in the roundest terms. This page of Grange history forms the most discreditable phase of the whole movement, and proved a source of the greatest grief and annoyance to the true-hearted men who were toiling to guide the Order aright.

Fourthly, reckless finance did much to weaken the Order. The system of paying delegates to the Dominion Grange return fares and \$2 a day while in session ran away with very large sums. A depleted exchequer meant a curtailment of active propaganda work, an absolute necessity for an order whose clientele consisted of scattered agriculturists.

Fifthly, the counter attractions of the Farmers' Institutes, organized and encouraged by the Government, proved very strong.

WAS THE GRANGE A FAILURE?

It is very easy to speak of the many and obvious faults and mistakes that so marred the course of the Grange, and still easier to dismiss the whole movement as a failure. And yet nothing could be more unjust or lacking in insight. The Grange was not a failure in Canada. The name "Grange" "defamed by every charlatan and put to all ignoble use" has stood in the past and still stands for high and brave ideals. The testimony of many competent witnesses is undeniable, and puts on record that with all its mistakes, disasters and dissensions, no other organization has ever had so great an influence for good on the farmers of Canada. As one old gentleman has said, "It set the farmers thinking, and got them together, and gave them a sense of common interests. Unquestionably the Grange was of great benefit to the agricultural class in Canada."

No cause for which men of high ideals strive unflinchingly through fair report and through foul can ever be a complete failure; it must leave its mark for good on the community. Any order which contained in its ranks men like Jabel Robinson of Middlemarch, Henry Glendinning of Manilla, Wm. Blair of Truro, and W. L. Smith of Toronto, to name but four out of scores, must have been a power in the land, and such the Grange was.

The Grange appears to have found its second youth in the United States and to be in a flourishing condition on the other side of the border. It cannot be denied that it is at a very low ebb in Canada. It is possible, however, that a revival may yet come. The amalgamation with the "Farmers' Association" in 1907 infused some fresh blood into the Order, but did not have the revivifying effect that was hoped and expected. The Farmers' Institutes are increasingly active and draw much benefit and support from the Government, and these organizations certainly supply much that the Grange could for the farmers, although, of course, in no way approximating to a

secret society, a feature which has always been counted of great value by members of the Grange.

Whether the Grange has done its work and is now beyond revival, or whether time still holds something in store for the only order exclusively confined to farmers, remains to be seen. The impartial student of its history cannot but echo the motto "Esto Perpetua."

I am greatly indebted to a number of correspondents in different parts of Canada for information courteously supplied. My thanks are, above all, due to Miss H. Robinson, of St. Thomas, for a complete set of the Annual Reports of the Dominion Grange, probably the only one in existence, and for many other documents bearing on the history of the Grange, also to Mr. R. W. Starr of Wolfville, N.S., for documents and information.

H. MICHELL.

WHAT THE PRESENT WAR MEANS.

MR. Carnegie's Temple of Peace at the Hague has been opened just in time to look out on a general European war. To add to the irony of the situation Mr. Carnegie, casting about in his inaugural speech for a possible guardian of permanent peace, fixed upon the German Kaiser as its main hope and stay. The great ironmaster's appeal was natural enough, of course, and a well-timed use of a good opportunity, for the Kaiser was then the strong man in Europe, and it is only the strong that can keep peace or do much towards it. But the question is always, has the strong man got all that he wants?

If the Kaiser has not quite got all he wanted he has certainly got a very great deal in the five and twenty years during which he has ruled Germany. He has succeeded in spite of some democratic opposition in building up the great German military machine to the utmost extent that the nation can bear. Even the Socialists in the Reichstag voted for the extension of the conscription last year, being pacified partly by the fact that the additional expense was to be laid only on the wealthy classes. Within 12 years or so he has raised the German navy from a position of insignificance to the second place after Great Britain's. He has seen a great German mercantile navy grow up whose oversea commerce is already about three-fourths of that of the world-wide British Empire. German bankers and syndicates under his protection have extended their operations and planted their agencies all over the Near and the Far East. German industries have risen rapidly to a commanding position in the markets of the world. Germany has been getting her slices of the globe, too, naval stations and points of vantage; she has got slices of territory in Africa, part of New Guinea, with many adjacent and outlying islands in the Pacific; she has got a port and two hundred square miles of territory in China; she has got (from Britain, by exchange), Heligoland, a rock fortress, which now protects the German coast instead of threatening it, as formerly.

Naturally she has encountered keen competition, and some opposition in this expansion, and it is true her holdings are

still not much compared with those of old established empires and colonial powers, but Germany came late into the field and cannot expect in a few years to rival the work of generations and centuries. There is only one way of doing that and the others all know it. Best of all for him, the Kaiser could sit back and reflect comfortably on the fact that the population of Germany was increasing at a greater rate than that of Britain or France. Why, then, should he go to war and stake all these gains in a mortal conflict with three great Powers, even if he had Austria-Hungary to help him? There is every reason to believe that he knew Italy would not join him in such a venture. It is months now since the Austrian Premier gave a very plain intimation of his opinion on that point.

The security of Germany from attack was unquestionable. No nation in the world would have sought war with her unless forced into it by her aggressions. Even Austria-Hungary, as her firm ally, would have had "peace in our time," as the Prayer Book says, by simply abstaining from stretching out further a despotic hand over the young nationalities of the Balkans.

But the truth is that Germany has been so confident in her military strength, so arrogantly confident, that she has not hesitated to challenge at one and the same time during the last eight or ten years three great European powers by an openly aggressive policy. Not to speak of the feud with France, the Germanic policy in the Balkans has been not only a menace to Russia but a steady series of humiliations, and at the same time it has been just as openly challenging British power on the sea and forcing a very burdensome competition in naval armaments on England.

GERMANIC POLICY IN THE BALKANS.

Professor Muensterberg, of Harvard, is trying to persuade the Americans that Russia is to blame for the present war. She was mobilizing, he says, although the Kaiser asked her not to. No one can tell yet how this new constitutional or semi-constitutional Russia is to turn out as an influence in Europe once she gets on her legs again. She appears to be willing to enter upon better courses, but I would not expect miraculous changes. In the present case, however, it is hardly

reasonable to accuse her of aggression because she began to mobilize when a large Austrian army had already advanced on Servia. Consider the previous history of the Balkan peninsula.

A generation ago, what is now the Balkan problem appeared to the British simply as a question of preventing Russia from seizing Constantinople and posting herself on the route to British India. But Britain had no territorial ambitions in the Balkans, and when the young Slav nationalities there sprang into life from the ruins of the Turkish Empire, she left the field to them and to Greece. But though it was Russia that had unclosed the grip of the Turk on them, Russia's own path to the open waters of the Mediterranean was closed by their coming into being. That was the final result of the Crimean war, were John Bright still alive to ask about it. All that was left to Russia was to play the part of the big Slav brother in advising, controlling, protecting.

But now the Germanic powers, who had hitherto stood aside, began to put a finger into the pie. At the Congress of Berlin in 1798 after the Russo-Turkish war, Austria-Hungary, supported by Germany, acquired a protectorate over Bosnia and Herzegovina and re-entered the circle of German interests as the ally of that now dominant military power. Russia got Bessarabia, but paid for it with the loss of Roumania's friendship. Since that time the Balkan peninsula has been a hot-bed of diplomatic intrigues, the young nationalities there being jealous competitors for what remained of the inheritance of the "sick man" and almost equally distrustful of Germanic encroachment and Russian control. Russia had an advantage in being the natural standard-bearer of the Pan-Slavic ideal, but the Germanic powers have been scoring the most points in the contest. Roumania, which has a German prince as its ruler, was drawn to their side. Another German prince was planted quite recently in Albania. Russia also had to sit still during the period of her disorganization after the Japanese war and see Austria's final annexation (in 1908), of the Slav peoples of Bosnia and Herzegovina. And what is the ultimate goal of these encroachments and intrigues? Albania is already struggling in the net, and Russia naturally suspects that it is a Germanic control stretching to the Aegean, perhaps to Con-

stantinople, and convertible some day into a great Germanic empire with its subject peoples. What have Germans to do in those old Slavic lands anyway? Before that simple fact Prof. Muensterberg's denials of a German policy of expansion can expect little credit. Nor is it quite fair to represent the conflict, as Prof. Muensterberg does in a recent issue of *The Fatherland*, as an inevitable conflict between "the *onrushing* Slav world and the German world." He seems to forget that in the Balkans the Slavs are where they belong and have always belonged, at least since the migrations and wanderings of the early centuries, while the Germans are where they can only appear as foreign conquerors.

THE IMMEDIATE AIM IS TO CRIPPLE FRANCE.

Russia is still in a stage of political and economic transformation and was in no good position to become a ready or willing aggressor at present. But she was obliged to mobilize unless she was willing to submit tamely to further Germanic encroachment. In such circumstances Austria-Hungary's attack on Servia could be nothing but the signal-gun for a general European war, and it would be fatuous to suppose that that signal was given except in concert with Germany. Germany began by formally asking Russia's intentions, but hurried at once with a million men to the French frontier and invaded without warning the neutral states of Luxembourg and Belgium.

What kind of a war are we to call this? The best name the Germans themselves can find for it—and they have been discussing it openly enough for some time past—is *Präventiv-Krieg*, that is, Preventive War, only its meaning is not to prevent war but to strike first. And this *Präventiv-Krieg* is really directed against France. To cripple that power is the first step to all further steps for Germany.*

The enmity which has existed between France and Germany since the latter took Alsace-Lorraine in 1870 has had

*"In one way or other we must square our account with France if we wish for a free hand in our international policy. . . . France must be so completely crushed that she can never come across our path."—*von Bernhardi*.

various degrees and phases, but its last phase in Germany seems to be a sullen recognition that the price she has paid for Alsace-Lorraine is mounting up very high. Germany has expansive ambitions and the hostility of France means that there is a powerful voice and vote against her at the council table of the Great Powers and a certain foe in the event of war with any of them. Whether Bismarck meant it deliberately or not, his policy in 1870 has forced the German nation to be a nation under arms, an armed camp with a military autocrat and aristocracy in command of it. No doubt that has its advantages as a training. It has made the German practical, energetic and a shrewd calculator. I think Prof. Muensterberg is right in his view that their new industrial energy and commercial enterprise have one and the same root as their military discipline and imperialism. What is certain, at any rate, is that they are vigilantly supported and protected by the Government. But, all the same, the strain of this position is making the Germans more sombre than they used to be, less free and genial. In Berlin they all seem to work as if there was something on their minds, as if something were hanging over them. The old geniality and honest simplicity of the German character are disappearing, they have become rudely, almost ruthlessly, practical. You can see the change in their literature also. The old humanitarianism of Lessing and Herder (both Prussians) and the ideality of Schiller have given place to the bitter idealism of Nietzsche and the stern principles of "world policy."

So the Kaiser may have made up his mind to end it. If Germany triumphs, she will take all old Lorraine and something more, perhaps Belgium as well with its great shipping port of Antwerp, and reduce France to a second-rate Power. There will be no one in Europe to say her nay, no one to raise a voice of power against any methods of subjugation she may choose to employ. And she will perforce be an armed camp for another century, but an armed camp in Roman dignity and ease. If she fails, she will have to surrender some discontented non-Germanic provinces and some oversea possessions; she will lose much of the commerce she has built up largely by means of her military power and prestige. Her dream of domination will have ended, and it is safe to predict that there

will be a constitutional change in the power and prerogatives of the German Emperor.

GERMAN HOSTILITY TO BRITAIN.

It was during the Boer War in 1900 that the deep and general hostility expressed by the Germans first began to arouse John Bull's suspicions. That hostile sentiment was partly perhaps a generous sympathy with the smaller nation, but the Germans keep a watchful eye on oversea and colonial affairs, and it had its roots partly also in the colonial ambitions Germany was cherishing in Africa. When some years later, therefore, the extensive naval programme of Germany began to reveal itself, accompanied every now and then by some significant utterance of the Kaiser's ("Our future lies on the ocean," etc.,) which could only be interpreted as a challenge to Britain, the man on the street began to realize that a conflict was probable. In 1904 Great Britain came out of her "splendid isolation" and entered into an understanding with France, which a few years later took final shape as the Triple Entente. It was not an absolute alliance on the part of Britain and was probably chiefly designed to guard France against an assault from Germany, when Russia's energies had been diverted into a conflict with Japan in the Far East. In the autumn of 1905 a great pacifist, Sir Henry Campbell-Bannerman, became the head of the British Government and at once proceeded to reduce Britain's naval programme in the hope that Germany would follow suit. The only result was that Germany increased her rate of building and in 1908 was building four ships to Britain's two. Britain's pacifist policy had been a conspicuous failure. Elsewhere also the Germanic policy (as we may call the policy pursued in concert by Germany, Austria and the Hungarian aristocracy) was steadily forcing, with a sort of arrogant confidence, the lines of the Triple Entente closer. In 1908 Austria-Hungary annexed finally Bosnia and Herzegovina. In 1911 Germany made an attempt to seize a port in Morocco and thus secure a strategic position at the entrance of the Mediterranean. It would have been a fine shelter for the Goeben and Breslau the other week, and the Gut of Gibraltar would probably by now have been alive with floating bombs, but the attempt was frustrated by the resolute action of Britain and France.

The Morocco incident served at least to test Britain's attitude. The war party in Germany was eager for war, the Crown Prince applauded publicly von Heydebrand's fiery speech. But the Kaiser held off, as he has done on more than one occasion. For the last two years, however, Great Britain has been figuring in the publications of the Alldeutsch or Pan-Germanic party as the irreconcilable enemy, no less than France or Russia, of German interests. Many of the well-known *Politik* series of pamphlets are directed against "England." In one of them (England's Weltherrschaft und die Deutsche Luxusflotte), the writer tells his countrymen that to increase their army is not enough, they must also have a navy capable of coping with that of Great Britain in order to secure their "share of the world." (Welterbe). Then he proceeds to reassure them as to the ultimate issue of this contest:

"Now some over-anxious souls may think that England will always be able to surpass us in naval construction, so that all our efforts will be in vain—the relative numbers will remain always the same.

" . . . These ideas are those of people whose information is decades behind the times. . . . We have steadily and continuously, and with less expenditure of money than England's, been approaching her strength upon the sea. Let us compare the numerical growth of British and German line-of-battleships from 1898 to 1912. At first we stood as 1 to 6, the British fleet being more than six times as strong as we; two years later the ratio was 1 to 4.8; four years later, 1 to 3½; after two years more, 1 to 2½, and to-day (1912) England is not more than twice as strong as we. It is an almost silent struggle the world significance and greatness of which later centuries will know how to appreciate. . . . England will not always be able to keep up the ratio of 2 to 1. Work is higher paid in England than with us, and once we have got the desired number of sixty great ships-of-the-line she will not be able, from financial reasons, to construct 120 dreadnoughts, and besides she has not the inexhaustible reservoir of men which universal conscription provides."

The failure of Napoleon to master Europe because of his inferiority at sea is then referred to, an illustration which seems to betray the ideal of conquest in the writer's mind. Then he explains why the German fleet must be capable of coping with the British fleet before France can be attacked with the certainty of success:

Like a cavalry division on the right wing of our army, the (German) fleet must undertake the protection of its flank by an

offensive movement in the North Sea. The fleet must make it impossible for the British to land on the coast of France; it must be able to scour all around far in front of our advancing army. . . . It does not matter at what point the 160,000 English attempt to land, wherever the English transport fleet is waiting, the black smokestacks of the German squadrons must rise on the horizon, and the rear German battleships sink it to the bottom of the sea, while the others in a death-grapple with the convoying fleet send them and themselves to Hades."

The writer never seems to doubt for a moment that the German armies can sweep victoriously on to Paris if British reinforcements can be prevented from landing on their flank. Then he concludes his pamphlet (which consists of 47 pages with five more of naval statistics and estimates) with the following stirring appeal:

"In this sense (i.e. the necessity of combining sea-power with land-power) is the once derided saying that "our future is on the sea," now accepted by the conscious will of the whole nation. . . . Germany looks with clear eyes towards the time when German valor will give proof of itself on the rushing seas. To the great days in our history, from Fehrbellin to Sedan . . . there will be added another day which will be named from some bank, or shoal, or spot somewhere in the North Sea, which the unnautical man has never heard of, but which our grandchildren will read of with enthusiasm."

Such is the literature which has been circulated in Germany by the tens of thousands during the last two years. The pamphlet (26th thousand edition, Berlin, 1912) from which I have taken the above extracts is only one of a series printed and published in close connection with *Das Neue Deutschland*, a weekly which publishes on its front page a long list of eminent names as amongst its supporters and contributors: Geh. Justizrat Dr. Revoldt of Berlin, Geh. Admiralitätsrat Paul Koch of Berlin, Hofrat Prof. Dr. von Below of Freiburg, Professor Dr. Bredt of Marburg, Regierungsrat Prof. Dr. Julius Wolff of Charlottenburg, Oberegierungsrat Frh. v. Camp—Massaunen of Berlin and a score more of similarly betitled names. With such literature flooding all Germany, not to speak of more scientific works like that of General von Bernhardi, is it any wonder that Britain no less than France was forced into the most watchful attitude of defence?

It is true that the writer of the pamphlet pretends to demand only that Britains naval superiority shall be reduced to

something with which Germany can more nearly cope. But does anybody believe that Germany would stop there? Naval superiority, like military superiority, must always lie somewhere, but it is evident that it is safer for the world in general when they do not both lie in the same hands. Naval superiority alone, however powerful it may be for defence, is no great weapon for aggression. There could be no worse fate for Europe than that supremacy both on land and on sea should be in the hands of the Kaiser and his military aristocracy.

THE KAISER'S AIM.

That Great Britain would stand by France in this war must have been foreseen by the Kaiser, though perhaps he was surprised by the swift and decisive action of the British Government in sending the fleet to the North Sea. There was the bold promptitude of an aristocracy in that, but an aristocracy of another type than the German, and trained to work with democracy. There can be little doubt that Germany has been preparing for a conflict with Britain as well as France as a necessary step to a kind of world supremacy including a great territorial and commercial expansion. It is the ideal which Treitschke and other German writers have ever since the Franco-German war been holding up to their countrymen as the logical and inevitable development of the German nation. It is the old goal of universal domination, the goal of Rome, the goal of Napoleon, that is once more looming up to menace us. Doubtless the Kaiser would have preferred not to fight both France and Britain at once, but he seems to have judged that no more favorable moment was likely to arrive. Britain appeared to be on the brink of civil war over the Irish question, and the great self-governing colonies were only beginning to work at a defensive organization for the Empire.

INTERNAL CAUSES IMPELLING GERMANY TO WAR.

The internal political situation in Prussia has also no doubt had something to do with the Kaiser's decision at this time. The opponents of electoral reform in Prussia, the all powerful Prussian nobility in particular, saw that they were about to face a struggle for the equalization of the franchise.

At a general meeting of the Berlin Social Democrats on 14th June last, it was resolved to accumulate a fund to be employed in a political strike on behalf of an equal franchise. The proposal aroused notes of alarm both in the Upper and Lower Houses. Strong speeches were made calling on the Government to take energetic measures against any political strike as unauthorized by the Prussian constitution. The Prussian nobility, a strong and high spirited body of men who think, justly enough, that they have done much to make the German Empire, are determined not to sink into political insignificance, even if it needs an adventure that staggers the world to prevent it. The speeches made in the Herrenhaus two months ago not only showed a stern determination to resist all change in the peculiarly restricted franchise, but had a tone which hinted that the time had come for the policy of *Rückbildung*, (development backwards), that is, the further restriction of the lower class vote. Of course a *coup d'état* of that kind would be too bold a stroke in time of peace, but it might be done after a great war, were Germany victorious. That this is really part of the Alldeutsch party's programme is stated, not at all obscurely, in a book of 300 pages recently written by Dr. Paul Liman on the character and views of the Crown Prince. "The final form of our political life," writes Dr. Liman, "will be determined on the battle field. The boundaries of future claims and rights will be drawn by the sword, by the capacity to conquer. . . . Not for the first time will democratic demands then be paid back in their own coin by the possibility of obtaining the restriction of popular rights (*die Beschränkung des Volksrechts*) and of carrying the question of electoral claims into the fiery atmosphere of conflict. . . . then would a *coup d'état* appear in the milder guise of a necessary measure of defence." That is the policy with which the Crown Prince and the Alldeutsch party are openly credited with by a member of that party. Dr. Liman's book is not a wise or solid book, but it must be admitted that his portrait of the Crown Prince is in accordance with much that is known and heard about him. The Kaiser, on the other hand, is represented as too hesitating in his policy, as one of those drilling, accumulating, grenadier-collecting Hohenzollerns, who leave it to more daring successors to use the resources they collect.

RADICAL PROTESTS.

Of course, such literature does not pass altogether without protest from the democratic camp. I saw a couple of pamphlets on the other side. One was by a Berlin journalist, Hans Leuss, and was a moderate, though very outspoken, protest against the helpless political condition of the German people liable to be hurried into aggressive war at a moment's notice by the will of one man. Herr Leuss also exposes very clearly the danger into which a too ambitious policy is leading the German nation. In this connection he refers to the recently published book by Dr. Liman:

The Crown Prince, according to Dr. Liman, is an admirer of Napoleon I. That world-shaker, to whom Europe was but a mole-hill, would not have said so of the Europe of to-day. In population, wealth and military resources Europe has made giant strides since Napoleon's time. . . . And even the genius of Napoleon was not equal to the task of establishing the domination of one nation over Europe. What Dr. Liman expects of the Crown Prince comes to this, that he shall involve the German nation in a war for the domination of the world; that is to say, that we shall pit ourselves against France, Russia and Britain for the domination of the earth (um die Herrschaft der Erde). Let us just consider quietly and seriously the fact that this idea fills the minds of our German expansionists. . . . Even Dr. Liman cannot deny that Germany may be beaten in such a war, especially as a man of Napoleonic capacity is not really visible amongst us. . . the programme of our Pan-Germanists and military classes is destruction itself; arm, arm and show the teeth everywhere; first 40,000 more recruits, then quick a three years' service law, and then forward—Präventiv Krieg!

There is liberty of the press, you see, in Berlin, or at least there was two months ago when that pamphlet was freely circulated in the streets. Of course, Herr Leuss, who has already been in conflict with the authorities for his outspoken protests against the absolutism of the German Government, is studiously moderate in his tone and intimates more than once that he does not mean to suggest that the Crown Prince might not prove a capable ruler, if only he were put under constitutional restraints. But his title-page is sufficiently startling. It is "William the Last?" (with a point of interrogation) and something very like a black cross by way of ornament below it. But he is only one of a few voices that dare to raise themselves in an armed camp. The German middle class he admits is politi-

cally torpid, though many are uneasy, the capitalists are tempted by war armaments and commercial expansion; professors and literati by the Government's command of patronage, of positions and the titles so dear to a German's heart, Hofrat, Geh-Regierungsrat, etc., etc., and by the new historical conceptions of national development to world-supremacy. And all—even the great German students' union—fear and dislike the workingmen movement. That is the reason why the great German middle-class have sunk into resigned followers of the military aristocracy. They are really powerless to control the policy that leads to war; they could only cripple, by refusing supplies, the military force behind it to their own danger.

POLES, DISAFFECTED, SEEKING INCORPORATION WITH RUSSIA.

Another cause that may have helped to push the Kaiser into the arms of the war party is the situation in Prussian Poland. For some years past the Prussian Government has been carrying out a rigorous policy (the so-called East-mark policy) of uprooting the Polish farmers and breaking up the Polish estates in order to settle German-born farmers there. In no other way, it seems, do they now hope to make that part of old Poland a secure portion of the Empire. In *Neue Deutschland*, of 20th June last, a weekly which is one of the organs of the German Nationalists, I read an article on the Polish question which concluded that "the only means" to extinguish the hopes of the Poles for the restoration of Poland is "to put into decided, unswerving operation, without secret relentings, the German East-mark policy and to employ as its most weighty and effective instrument the development and extension of a strong wall of German farmers."

One result of this policy has been to create a movement amongst the Poles in favor of incorporation with their old enemy Russia, as the best road to a possible future kingdom of Poland. That is, they now fear Russia less than Prussia as a relentless exterminator of their race. This Polish movement, die Russische Orientierung, as the Germans call it—has also its threatening aspect for Austria and is no doubt amongst the causes which have determined the Germanic powers to bring on this war. If Germany is successful, she will proceed to break the Polish spirit more scientifically and effectively than

the old semibarbaric methods of Russia were ever able to do. And she could then do it untrammelled by the public opinion of Europe.

ISSUES OF THE WAR.

There may be some room for doubt and discussion as to the causes of this war, but there can be little as to the great issues it involves. The ideals of Germany at present are those of a military aristocracy. It is to carry out those ideals that the strenuous Prussian discipline has extended its iron hand all over the land. Those ideals involve, just like those of old Rome, the reduction of all possible rivals to a condition of helpless subordination; they involve the practical suppression of the independence of small nationalities; they involve a form of military rule and privilege dangerous to civil freedom. The triumph of the two Germanic Powers with their Magyar comrade would mean the cessation of that kind of democratic progress which gives the peoples a voice in the decision of war and peace and in the making of their own destinies. It would threaten, I think, all that kind of progress which is based on the general public opinion of Europe. Of course, I do not mean to say that such ideals are consciously accepted by the German people as a whole, but only that they lie on the road that Germany is taking. German Liberals would naturally deny this and point to their struggles and the growth of the socialist vote. But there is the experience of thirty years to show that they are practically helpless in the current that is carrying Germany on her course. There is much unreal talk and superficiality in our modern humanitarianism, no doubt, but none of us would like to change it for this new type of military despotism which is seeking supremacy in the world. The present war has many aspects of racial, military and commercial rivalry, but its most fateful aspect is that it is a struggle between humanitarian ideals and those of a military autocracy. The open contempt for international law which Germany has already shown in Belgium and elsewhere merely lifts an edge of the curtain.

Germany has been aggressive enough in a practical sense, but her greatest aggression has been a moral and psychological one on the spirit of Europe, and consists in that universal militarization which turns a nation into an armed camp as ready

for war and conquest as the Hunnish and Gothic hordes of the early centuries. She has forced all Europe, except Britain, into that system, and if she succeeds in the present war, it will be fixed as a model on the world. America will not remain long exempt. A military autocracy is always a dangerous neighbor to free constitutional peoples governed by orators. There is a materialistic reality and truth about it. It is training and preparing while the other is talking party talk. It is the case of Philip of Macedon and Demosthenes over again, only that the world has grown too large to be easily mastered. But all free peoples must band together to destroy such an autocracy, otherwise it will destroy them. My estimate of what the triumph of Germany in the present conflict would involve may seem exaggerated, but I fear it is only too much in accordance with the history of all military supremacies I know of. But it is a good time to remember that the British Empire fought a harder fight a century ago and came out in the end victorious.

JAMES CAPPON.

August 22nd, 1914.

FOOD AND ITS ORIGIN.

A well educated person of the last generation was expected to know "a little about everything and everything about something." Our generation does not admit the necessity for this breadth of culture. Specialization in an acute form holds sway in most institutions of learning and the necessary results are evident in all educational conferences. The language and judgments of one group of thinkers are foreign to the other groups. It has been often observed that a coin—even a small one—held close to the eye will exclude a beautiful landscape. An increasing tendency to this narrowness of vision seems to be in progress, with the result of intolerance toward what we do not understand.

If each of a group of scholars were asked to name the activity which to him seems the most important in the world, we would obtain a great variety of opinions, and these judgments of values would be closely related to the lines of study pursued by their authors. But however far the opinion of one might differ from that of another both would probably agree that any activity absolutely essential to life is one of fundamental importance. Ability to maintain life must be assured before any discussion as to manner of living is in order.

In connection with the survival of the individual and hence of the race, the factor of prime importance is the supply of food. With a few interesting exceptions no living things except green plants are able to *make* the food which nourishes them. All other plants and animals, including man, are parasitic on the green vegetation. Some of the phenomena connected with this process of food making are the subjects of this paper.

Many parts of green plants, such as the bark, the wood and the root, are dependent, not manufacturing their own food directly, though often subservient to the general nutrition of the whole plant. Other portions such as spores, sporecases, and flowers perform no useful function for the individual, and must be considered as parasitic on the vegetative parts. They are, however, of immense importance in the reproduction and

particularly in the distribution of the race to which they belong. The parts that are of importance in the making of food are green in colour, or at least contain a green pigment—chlorophyll—which is in some plants masked by yellow, brown, or reddish stains.

It is plain that in any kind of manufacture three essentials are necessary—raw materials, a source of energy, and structures in which the latter may act upon the former without loss of the product. If plants are to be able to live everywhere, the raw materials and the energy must be found everywhere. Of the several possible kinds of raw materials two were chosen—one carbon dioxide, a waste product almost universal on the earth's surface, the other water, of much more restricted distribution, but as either solid, liquid or gas found over much of the earth's crust. We can think of gravity, electricity and light as possible sources of energy; of these the latter—or better radiant energy—is selected by plants as the force required to bring about changes essential to their existence.

Of these substances and forces used by plants in making food, that which is least noted by us is carbon dioxide. The facts that almost exactly one-half of the dry weight of every plant is carbon, and that, so far as we know, carbon can enter plants only in the form of this gas, make a great supply of carbon dioxide necessary for building up the immense mass of vegetable matter growing at any time on the earth. When we learn that ten thousand pounds of air contain on the average less than three and a half pounds of carbon dioxide, we feel that the effect as shown in vegetation is too great for the cause. However, a little mathematical labour will show us that a layer of atmosphere one mile in thickness contains at least three hundred and fifty billions of tons of the required gas. This supply is maintained by the constant combustion and decay of every kind of matter that has ever been alive. One of the ultimate products of the decomposition of organic matter is carbon dioxide, and another is water. Life is therefore a cycle in which these two substances play their parts over and over again, entering into the composition of every form of living thing and being set free when these creatures die and return to "dust."

Water and its elements make up an even greater proportion of the bodies of living things. Many animals and plants should be called watery creatures, if it is correct to describe a house as of stone because that is the material most largely used in its structure. Even man himself may be properly entitled a walking aquarium since about two-thirds of his living weight is water.

The entrance of water into plants and the lower animals was long called a vital process, and its method was not understood. It is now known to be merely a physical phenomenon. We know that when a solid or a gas dissolves in a liquid the particles of the solid or gas reach in time all parts of the liquid. In other words the dissolved substance diffuses throughout the entire body of liquid, and this process may be observed until the dissolved substance has become equally concentrated or distributed throughout. The dissolved substances practically become liquids mixing with the solvent, and when two liquids, such as alcohol and water, dissolve each other, the same process of diffusion occurs.

Even when one liquid is separated from another by a membrane or partition which both can wet through, diffusion takes place through the membrane just as in its absence, except that one of the substances may be able to pass through the partition more rapidly than the other. We shall not try to give reasons for the difference in the ability of liquids to pass through the minute interstices in a membrane, no doubt the size of the interstices and some peculiarity in the molecules of the liquid are the deciding causes. We know that gasoline will filter through chamois skin more rapidly than water will, and that hot water will go through more rapidly than cold, and that a thin layer of paraffin will completely check the passage of water but not of coal oil.

Again, dissolved sugar will diffuse through a piece of parchment much less rapidly than water will. So when a bottle completely full of dissolved sugar, and covered tightly with parchment, is set in a jar of pure water, we find that water diffuses into the bottle much more rapidly than sugar or water diffuses out. No doubt the sugar interferes with the outward diffusion of the water. The rapid inward diffusion increases the water in the bottle, and this results in such a pressure as to

stretch the parchment. If an open glass tube be tightly sealed in the parchment the pressure will send a column of water upward in the tube to the height of several feet. This movement of liquid through a membrane is often called osmosis, which is really only another name for diffusion.

The parts of a plant which take in water are quite comparable to the bottle containing sugar separated from purer water by a thin membrane. The root hairs are closed tubes with extremely thin walls lined with protoplasm, and containing sugar, salts and protoplasm all dissolved in water. Outside the root hairs is soil water, not pure but usually much more dilute than the water inside the root hair. Hence water will diffuse inward more rapidly than outward, and the contents of the root hair will become dilute. The cell next to it on the inside, having more concentrated contents, will receive water from the root hair by the same process of diffusion. In this way water diffuses from cell to cell till it passes into the vessels, which are practically long tubes through which the water is driven upward by osmotic pressure to the leaves. Here evaporation is going on, keeping the contents of the leaf cells so concentrated as to cause them to continually take water by diffusion from the vessels, and so draw it from the root. Thus water enters the plant by a physical process quite beyond the control of the plant, far more coming in than is needed when there is plenty of pure water in contact with the root hairs, and when the soil is warm. After sunset in June the water thus taken in is often forced out as drops on the grass blades, and we mistakenly call it dew. When drouth makes the soil water scanty it becomes so rich in salts as to diffuse but slowly into the thirsty plants.

Just as water and salt solutions diffuse into the roots of a plant, carbon dioxide dissolved from the air diffuses into the green leaf cells. Here the two substances are subjected to the chemical power absorbed by the chlorophyll from the energy of the sun's rays. Man can scarcely decompose water and carbon-dioxide with economy, but the green leaf quickly brings about a change which results in the formation of sugar. The first stage in the synthesis is probably the production of formaldehyde, accompanied by the setting free of oxygen. Formaldehyde, like the other aldehydes, has a great power of adding

its molecules to those of other substances, and even of adding together its own molecules to form a more complex substance. Probably by way of this latter action the molecules of formaldehyde are, as rapidly as formed, polymerized into a sugar. This is the more necessary since the aldehyde is itself a virulent poison and if not used up at once would inevitably kill the cell. This deadly power of formaldehyde has long been used for preventing the action of bacteria such as those of fermentation and decay, but should not, of course, be used for preserving foods. Some manufacturers and dealers were willing, however, to risk using a little of it in milk and preserved fruits and vegetables. Public analysts in time discovered delicate tests for it, by which so little as even one part of formaldehyde in one million of liquid can be detected. We are therefore able to make evident even the extremely small amount present in leaves.

If we are correct that it is the power of radiant energy, arrested by chlorophyll, that causes the chemical action between carbon dioxide and water, and that chlorophyll itself is only a pigment, we should be able to extract this pigment and set it at work absorbing energy outside of leaves. Then by bringing this energy into contact with carbon dioxide and water we should have formaldehyde produced artificially. This we can accomplish. A mass of green leaves is soaked in alcohol or ether till much of the chlorophyll is extracted. This dilute green solution is treated with a little carbonyl chloride which takes the chlorophyll out of the alcohol. In this deep green solution a sheet of filter paper is soaked till saturated. The carbonyl chloride evaporates readily leaving a dry sheet of paper stained deeply green. When this paper thus made sensitive to light by the chlorophyll is moistened and exposed to light in a glass cylinder containing carbondioxide, formaldehyde is produced. Many forms of this experiment have been used, and the results coincide so well that but one doubt remains—can the formaldehyde have resulted from the decomposition of the chlorophyll itself? Experiments designed to settle this disputed point are now being carried on.

It is of great interest in connection with chlorophyll to trace a remarkable relationship between this characteristic pigment of the nutrition of plants, and haematin, the charac-

teristic pigment of the nutrition of the higher animals. Chlorophyll and haematin seem to be very similarly constituted, the former containing magnesium as an essential mineral element, the latter containing iron in the same relation.

As stated above sugar seems to be the first recognizable carbohydrate formed in plants after formaldehyde. This change has been brought about in glass also, by shaking formaldehyde for some time with precipitated chalk, and then evaporating all excess of the aldehyde. The test for a sugar may then be obtained from the residue.

It seems to be a law in living cells that the accumulation of any product of the living activities of the cells will, if it remains in solution, check the activity of those cells or even kill them. Thus the yeast that produces alcohol from sugar is destroyed by the alcohol it generates, and the bacterium that changes alcohol to acetic acid is checked by the acetic acid when this reaches a certain concentration. In the same way every animal and plant excretion must be removed if the cells which produce it are to remain active and healthy. Sugar solution accumulating in a leaf cell will paralyse that cell, so we find this carbohydrate being transformed into an insoluble one—starch—which is very similar in composition. In this form it accumulates during the day, but at night, when the manufacture of sugar ceases for lack of light, the starch changes back into sugar, which then diffuses away and is carried to the parts needing it at once for food, or to other places where it is stored for future use.

The substance cellulose, which is the solid material of plants, is of almost identical composition with starch and sugar and is readily formed from the latter by the plant. Another important foodstuff of plants is fat or oil, which is usually kept in reserve for the use of the seedling in the spring. Chemists have not yet been able to build up fats from carbohydrates, yet we know that both plants and animals are able to do this, and plants are also able to reconvert fat into sugar.

But the most remarkable and important of all chemical changes is yet to be mentioned, and man is far from being able to bring it about by his intelligence. This is the changing of starch or sugar into *protoplasm*, that marvellous substance which alone is the medium in which life exists.

Man as an animal body does transform his starchy and other foods into protoplasm, but he does not understand the process, much less does he know how the protoplasm becomes *alive*. The miracle of making the dead live is performed continually by plants and animals. We can best compare it to the burning of gas from a jet. A stream of cold, colourless gases moves forward to a certain point at which remarkable changes occur. Because of what is already going on at the tip of the burner the incoming gases become hot, are decomposed and recombined into new substances probably several times, and during these changes give out much light and heat. The incandescent mass is known as a flame, and the substances produced soon leave this region of brightness, passing on in the form of several new and usually simpler substances. The flame persists, although the materials producing it constantly move forward, being transformed into new substances while passing through the glorious state of incandescence. So dead food matters are constantly being absorbed by the blood and converted for a short time into a portion of our living bodies. Soon, however, they are consumed and excreted as waste matter, often as carbon dioxide and water, just as in case of the flame.

How the flame of life originates, is yet, and probably always will be to us, an insoluble problem. Few think of the mystery of it, our energies being so largely required in obtaining from the plants the food which will keep it burning with a fairly satisfactory vigour.

W. T. MACCLEMENT.

THE EUROPEAN WAR AND THE PEACE MOVEMENT.

THE titanic struggle now being waged in Europe occupies every man's heart and mind as no event for generations can have done. Half the world is at war, its peoples already engaged in the struggle, making preparation to reinforce the fighting line, or grappling with the problems created at home. The other half shows scarcely less interest in the news from the front, the reports as to the internal conditions of the warring countries, and the charges and counter-charges as to the causes, the rights and the conduct of the war.

Back of all the immediate and personal interest there is rising insistent questioning as to the future. Has this war proved the folly of all effort for peace, doomed the world to generation after generation more of rivalry in heaping up armament against armament, and to new wars to redress the old? Or will it rouse the nations to resolve that the vast sacrifices must not be made in vain, that a new way of life must take the place of the old? What the answer of the future will be may be left to the amateur prophets to unfold: prophecy, George Eliot told us, is the most gratuitous form of error. Conjecture is hazardous, with so many issues and factors still uncertain. Yet there is room and need for every man forming or revising his opinion as to what outcome is desirable, and as to how best that outcome may be sought.

The distinction between dogmatic prophecy as to the future and that striving to mould the future, that more or less reasoned hope and tentative forecast upon which all human action, individual and social, is grounded, seems an obvious one, but it is apparently too fine for some persons who now crow over deluded pacifists for having "believed war impossible." The *War Office Times and Naval Review*, for example, declared recently:

One would have thought, in view of the happenings of the last few weeks, that Mr. Norman Angell would have hidden his diminished head. But not a bit of it. This egregious egoist . . . is all the more blatant. In fact, the outbreak of war, which has effectively killed his theories, has, it seems, rendered Mr. Angell more active than ever. Having attempted to prove that war was an impossibility, now that war has become a fact, he is, we presume, seeking to demonstrate that it ought never to have broken out.

Mr. Angell's brief comment on this "Prussian humour" is sufficient to make the point clear even to the persons for whom it was required:

The quaint idea that a number of people would devote their lives to attempting to prevent something they believed to be impossible is worthy of Lewis Carroll.

"Oh! oh!" screamed the Red Queen, clutching her chair frantically, "I'm afraid I shall fall off the earth."

"But that's an impossibility, you know," said Alice wisely, "because of the Law of Gravity."

"I know it's an impossibility," replied the Queen impatiently, "that's why I'm anxious to prevent it, stupid!"

The *War Office Times and Naval Review* would presumably say of an advocate of inoculation to prevent typhoid that he believed typhoid to be an impossibility, and that an outbreak of that disease among the uninoculated had "effectively killed his theories."

However that may be, some things are already clear. In the first place, the peace movement has failed. After some fifteen years of unprecedented activity, of organized effort such as never before had been displayed in this cause, the advocates of peace must at least admit that they failed to "inoculate" a very large and influential section of mankind. In the second place, it is clear that the policy of "preserving peace by preparing for war" has failed even more signally. Governments and individuals have expended an amount of time and money, beside which the activity of the pacifists has been a bagatelle, in building up armaments in the belief that they were an insurance against war, the surest means to make any buccaneering nation hesitate to take the fatal step. Yet all this striving, too, has failed. It is clear, in the third place, that the war is bringing home to thousands to whom it was previously a matter of little concern, the overwhelming need of some means of attaining peace. We know now what war means, and though gleams of splendid pluck, of dogged endurance, of unsuspected chivalry, of national brotherhood, light up the black record, the passions that have been unchained, the sufferings of the men who have died in the trenches of the Aisne or the Meuse, the vandal waste of the civilization and cherished possessions built up by long generations of Belgian and French townsmen and peasants, the halt to the whole world's business, the breaking of personal ties and of national co-operative efforts, the spilling of the wealth so sorely needed for bettering the lot of

the millions who live at best of times from hand to mouth, the weeks of suspense or the years of mourning of those whose sons or husbands or fathers are at the front, these fruits of war have made many a man and woman vow to do what may be done to lessen the chance that such a war will ever come again. A few weeks of actual experience of war have done more than years of preaching of peace. There seems little doubt that after the war there will be in the peace movement a grim earnestness, a passionate intensity, a deep-felt popular interest, lacking in many cases before it.

Doubtless many of those who have preached armaments as insurance against war will continue to urge their case, and doubtless in one sense they will continue to be right. So long as other nations arm to the teeth, no nation can afford to neglect its own defence. For the progressive, democratic nations to disarm would be to give over the world to the ambitions of the militarist cliques, the practitioners of blood and iron.

After as before the war there will of course be wide differences of opinion in carrying out this principle. What is the danger? What allies can we rely upon? what provision must we ourselves make? are questions on which there is room for honest difference and for dishonest manipulation. Whether additional defences demanded are really in the country's interest or needed only to swell the dividends of Krupp or Creusot, will still need to be investigated. In Canada similar questions will have to be faced again, and faced more seriously. What our relations are to be with the other parts of the Empire, what responsibilities each part is to shoulder, whether we wish to rely on Japan for defence in the Pacific, what our relations to the United States and other American powers are to be; the relative merits of the German system of compulsory training and the British system of a volunteer force; the place of the battleship and cruiser, of submarine and air-craft, of fort and mine, these and other matters of policy or of technique will receive much attention. Whether there was really a naval emergency in Europe and if so whether it was an emergency for Britain and her allies, or for the Kaiser; whether Canada's part in sea defence could best have been taken by extra Dreadnoughts stationed in the North Sea or by cruisers in Atlantic

or Pacific waters, are issues on which difference is possible, though it is to be hoped that the party truce which has been proclaimed and observed by all except a few newspapers and politicians whose partisanship exceeds their patriotism, will continue after the war, so far as to reduce to the minimum the threshing of old straw, and to make possible definite and united Canadian action.

Provision for defence, then, in whatever form or degree, must continue. But it does not go to the root of the matter. It gives no assurance of permanent peace. The powers in the lead, on the plausible principle of better sure than sorry, attempt to increase their margin of superiority; the powers behind in the race, interpreting this great and growing preparation as threatened aggression, strain every nerve to secure equality or better. New groupings of allies are formed in the same hope. The doctrine in fact involves a plain contradiction in terms. As expounded by Mr. Winston Churchill a year ago, it implies that "to secure peace a nation must make itself stronger than any possible foe." Now the same doctrine is being preached by other exhorters to all other states, and on this assumption peace can be preserved only if at the same time each state or group in the area concerned can be stronger than any other. Doubtless a sense of the difficulties ahead will often restrain a warlike power, but the very heaping up of armament, the atmosphere it creates, the professional interest in how the machine works, are perpetual sources of danger. The element of chance, the differences in opinion as to relative strength, real or fancied grounds for special self-confidence, may at any time lead some power to think the carefully balanced scale dips strongly in its favor, and to risk the hazard. Some more dependable barrier is required.

If not from this direction can light come, from what other? It may be from the issue of the war itself, it may be from a successful outcome in the new clash of movements, interests, passions, ideas, which will follow the war.

Now that war has broken out, a victory over Germany is the surest means of bringing lasting peace. If Germany and Austria win, it will mean the dominance of Kruppdom and Junkerdom the world over, the disparagement of friendly trust, of loyalty and chivalry, of reliance on other sources of

strength than brute force. Arrogant victory would breed bitter planning for revenge, and the next half century would be hopelessly mortgaged by the claims of war and preparation for war. German hostility has been the chief stumbling-block in the path of peace. It was not a hopeless hostility; domestic forces might have overthrown the military caste, but now that war has come, it will be a very notable silver lining, and not merely German silver either, if it ends in the overthrow of this chief barrier. That it will so end few among us doubt. The way may be long, the sacrifices heavy; the resources and organization and determination of the enemy are not to be undervalued. Yet the resources at the disposal of the allies are immensely greater: omitting India, they outnumber the Germanic powers nearly three to one; omitting Japan, their military force is, say, three to two; their naval superiority is approximately three or four to one, while in the past ten years they have spent on army and navy nearly three dollars for their opponents' one. Back of this is the conviction of right that animates every part of the Empire and of the allied states, and the undoubted sympathy of neutral states, no negligible weight in the scale.

To make for peace, the victory must be a decisive one. Any drawn struggle, any uncertainty as to the superiority, will simply mean a breathing-space to prepare for renewing the conflict. The prestige of German militarism must be smashed, if worse is not to come out of bad.

Equally important with decisive victory are the terms of peace. Bismarck, who should have known, once declared that a war created more problems than it settled. If that is not to be the case in this war, a heavy responsibility will rest upon the representatives of the powers that meet to settle the terms of truce. It is not well to divide the bear's skin too definitely before the hunt, but if the peace is to be a lasting one, the lines of policy must be discussed in advance, and already in Europe some fundamental points have been laid down. It is clear that any such humiliation of Germany as Germany forced on France in 1870, any tearing away of parts of her territory thoroughly German in ideals and sympathy, would keep the sore open, would set up a concrete and abiding witness of humiliation such as would unite every German in preparation for

regaining the 'lost provinces.' A further point is well brought out by Mr. Winston Churchill, who, after warning against repeating Germany's mistake in 1870, continues:

Let us, whatever we do, fight for and work toward great and sound principles for the European system. And the first of these principles is the principle of nationalities—that is to say, not the conquest or subjugation of any great community or any strong race of men, but the setting free of those races which have been subjugated and conquered; and if doubt arises about disputed areas, we should try to settle their ultimate destination in the reconstruction of Europe, which must follow from this war, with a fair regard to the wishes and feelings of the people who live in them.

These are sound principles; the recognition of national aspiration, the recognition of the right of the people to choose their own ruler and not to be traded and shuffled like cattle, would go far to make peace enduring. It will be a difficult task; what Russia's attitude will be, whether she will for once keep faith with Pole and Jew and Finn, and carry out in peace the promises made in stress of war, is uncertain; doubtless Great Britain will have to be the moderating, impartial force, and the weight of Canada and the other Dominions, whose share in the war entitles them, in this era of new precedents, to a modest share in the terms of peace, would doubtless be thrown in the same scale.

Again, if the peace movement is to be more effective after than before the war, it will have to enlist the sympathy and the energies of thousands hitherto indifferent, it will have to press old policies more vigorously, and open new lines of attack. It will have to be less an "isolated propaganda," and more a guiding principle in all political and social thinking.

The question of democracy, for example, cannot be separated from the question of peace. Many of us have been prone of late to believe that, after all, governments differed little save in form, that democracy was a disappointment, that autocracies were perhaps not yet played out. Hapsburg, Hohenzollern and Romanoff have destroyed that illusion. Democratic England, democratic France, the United States and the British Dominions, have their serious faults, have even their jingo moments, but they are not framed for aggression, cold-bloodedly bent on war. The growth of democratic control in the east of Europe would make for peace. Whether it will come

or not, will depend on factors still uncertain or unseen. Success may bolster up Russian autocracy, humiliating terms may reconcile progressive Germany to military rule to prepare for revenge. We can only hope that the idealism of Russia and the essential democracy of the Mir will be liberated and enforced by the war, and that if the prestige of Junkerdom is broken, if the ideal of European domination for which middle-class Germany resigned itself to the rule of the military caste is seen to be unattainable, the movement toward responsible government, which was steadily and rapidly gaining ground in Germany, may be given new impetus. 1870 ended Napoleon the Little; 1915 may end still lesser Napoleons.

The attitude of Socialism in this connection is of interest. The socialist forces have not played the role in resisting war which many expected of them. In part, they did not try. Carried along by the nationalist sentiment which moved their fellows, though always on the left wing of the movement, always pacific as compared with their fellow-countrymen, they have for the most part supported the war. Most socialists had repeatedly said they would fight in a defensive war, and as of course no nation ever fights any except defensive wars, this left a fairly large loophole. Belgian socialists entered the Clerical government; French socialists, after announcing their intention to revolt if France took the aggressive, rallied to a man when Germany entered Belgium. German socialists split: the majority in the Reichstag, under fear of Russia, voted with the government, but Liebknecht led a minority who have protested vigorously and *Vorwärts* has kept up its criticism so far that it has been forcibly suppressed. Yet on the whole, as an American socialist bitterly remarks, "After shouting, 'Workers of the world, unite!' for half a century, we find it means little more than the 'Our Father which art in Heaven' which Christians have chanted for twenty centuries." Socialism is no more played out than Christianity. But, as Jaurès and Bebel agreed in pointing out, socialists (or Christians, for that matter) who wish to oppose war cannot do it after war has broken out. Only by seeking political power, by taking responsibility, by endeavoring to shape policy beforehand, can the red hosts make their numbers and ideals tell. (Incidentally, if some capitalists are making mock of socialist intentions, some so-

cialists are smiling at capitalist charges that socialism would mean "the waste of property," and "the destruction of the home"!)) Whether German socialism has had the soul drill-sergeanted out of it, whether it will be heard from in the event of collapse of German arms, only time will show.

Not only must democracy win, if peace is to come, but it must refashion the instruments of international relations. That present-day diplomacy is bankrupt is confessed. The lessening of the secrecy of diplomatic methods, the conclusion of arbitration treaties such as those which the United States has just made with England and France, the abandonment of the Balance of Power ideal, are among the methods that will have to be discussed. Sir Edward Grey, toward the end of that dramatic interchange of messages reprinted in the White Paper, itself the best justification of the Allies' course, made a remarkable offer which looked to the abandonment of the system of protecting or entangling alliances, and the establishment of a real Concert of Europe:

And I will say this: if the peace of Europe can be preserved, and the present crisis safely passed, my own endeavor will be to promote some arrangement to which Germany could be a party, by which she could be assured that no aggressive or hostile policy would be pursued against her or her allies by France, Russia, and ourselves, jointly or separately. I have desired this and worked for it, so far as I could, through the last Balkan crisis, and Germany having a corresponding object, our relations sensibly improved. The idea has hitherto been too Utopian to form the subject of definite proposals, but if this present crisis . . . be safely passed, I am hopeful that the relief and reaction which will follow may make possible some more definite rapprochement between the powers than has been possible hitherto.

That the governments of the different countries should assume a monopoly of the manufacture of armament has been proposed. This would still leave the possibility of political pressure from constituencies in which navy yard or ordnance factory was situated, but it would perhaps be better than the intriguing which goes on at present: we have seen English and German firms the past few months convicted of bribing Japanese naval officials, and in the past few years English governments misled by false statements of the armament ring as to secret rival preparations.

But back of all forms of government and instruments of policy is the question of the ideas that drive men on. We may not agree with Mr. Roosevelt in his denunciation of arbitration treaties, but we can at least agree with him that other things are more fundamental. He declared a week or two ago:

No frontier in Europe is as long as the frontier between Canada and ourselves, and yet there is not a fort, nor an armed force worthy of being called such, upon it. This does not result from any arbitration treaty or any other treaty. Such treaties as those now existing are, as a rule, observed only when they serve to make a record of conditions that already exist. The fact simply is that there has been such growth of good feeling and intelligence that war between us and the British Empire is literally an impossibility, and there is no more chance of military movements across the Canadian border than there is of such movement between New York and New Hampshire or Quebec and Ontario. Slowly but surely, I believe, such feelings will grow, until war between the Englishman and the German, or the Russian, or the Frenchman, or between any of them and the American, will be as unthinkable as now between the Englishman or Canadian and the American.

In the case of Canada and the United States there have been specially favourable factors at work, partly in the domain of interests, partly in the domain of ideas. In the case of Europe, there have been specially unfavourable ideas at work. As men think, so will they act. Prussian militarism, which has in part infected Europe, has built up a philosophy of force based on ideas essentially unsound but as powerful as dynamite. It has relied on a pseudo-philosophy, exalted Nietzsche and forgotten Kant; I do not venture to appraise the worth of Euckenism and other recent developments. It has appealed to pseudo-science, finding in Darwinism ground for theories of the necessity of armed conflict and the right of the strong to trample on the weak. It has relied on a false ethnology: Gobineau and Stewart Chamberlain built up the myth of the Dominant Teuton, fated to rule the lesser breeds, and swelled the pride of a people who conveniently forgot or in vain denied that southern Germany is less Teuton than northern France, and that northern Germany has a very large Slav mixture. It has relied on a false economic theory, shared, it is true, with other countries, the theory that war can bring economic gain; a theory which Mr. Norman Angell has riddled to pieces, in spite of attacks by critics who, to prevent being hampered by

mere facts, usually did not read his books; it takes time, however, to drive old prepossessions and prejudices out of a nation's mind, and unfortunately time was lacking.

Here is where the press, the pulpit, and particularly the university have their duty to perform. University Germany played a noble and patriotic part in stirring resistance to Napoleon's tyranny; it has played a shameful and sorry part in becoming the plaything of jingoism, the tool of Junker rule. It was a question whether the visitor to Germany was more offended by the swaggering lieutenant lording it over every passer-by or by the artificially-fierce pundit, with one eye on a petty decoration, seeking to prove the aforesaid lieutenant the climax toward which the whole creation had groaned and travailed. Modern Germany, and not least university Germany, have done good work for the world, but in high and permanent intellectual achievement the land of Goethe has not kept its leadership. Its science and culture were in great part perverted to the strengthening of military autocracy, the university made an annex to the barracks. Of course, we must not forget that there was a minority of other views, just as there have been Prussians outside of Prussia; Prussia is like Massachusetts, at least in being in part a state of mind. The same ideas that animate German reliance on brute force have been preached in England and elsewhere, in milder and more occasional form, it is true, but preached with much assurance: Mr. Hobhouse, in his *Democracy and Reaction*, has given a splendid analysis of a part of this campaign.

It is for the universities of this and other democratic countries, if they are not to be false to all the nobler traditions of learning and of liberty, if they are to deserve the trust the country has placed in them, if their idealism is to be more than a name, to take the lead in moulding the thought of the country along different lines. There should be no forcing of thought even in a good cause—diversity of opinion is to be encouraged, but let us at least live up to the light we have. For the present the task of democratic Europe, the task of Canada and the other Dominions, is to do all possible to secure the success of the Allies. To-morrow the time for other efforts will come. Their result is uncertain, but the place of the universities in the conflict should be certain and enduring.

O. D. SKELTON.

ROMAN IMPERIALISM.

Roman Imperialism, by Tenney Frank. New York, The Mac-Millan Company, 1914.

Imperialism is a word to conjure with, at times to juggle with. We are finding that in Germany they have another conception from ours of the meaning of "thinking imperially." At this time Dr. Frank's treatment of Roman imperialism is of special interest. The book propounds no startling theories; it gives careful conclusions based on accurate scholarship. The evidence of newly-found inscriptions is set against the statements of doubtful authors; the opinions of the latest investigators—for example, a Ph.D. dissertation for 1913—are examined, as well as those of great historians. In short, the work is an admirable piece of constructive criticism.

The rather narrow interpretation of the term "imperialism," in the sense of territorial expansion of the Roman state, shows the impersonal American point of view, but Dr. Frank is anxious not to apply modern standards to Roman conditions. Many German writers—and most of the names in the copious bibliography are German—"assume," characteristically enough, "that the desire to possess must be the mainspring of action in every war." Drumann looked upon Caesar as a mediaeval—or modern—freebooter. Niese and others explained the Second Punic War by the modern theory of "spheres of influence."

"If we hope to understand the stumbling, accidental expansion of Rome," says Dr. Frank, "we must rid ourselves of anachronistic generalizations and 'remote causes,' and look instead for the specific accidents that led the nation unwittingly from one contest to another, until, to her own surprise, Rome was mistress of the Mediterranean world." He traces this development from the pre-historic tribal communities of Latium to the Roman Empire, passing over the constitutional struggles at Rome, bristling with fine legal points. He mentions Cicero only as a reference, and he avoids the tempting discussion of Caesar's constitutional right to return from Gaul to Rome. He touches home politics only to explain foreign relations.

Acquisition of territory, he contends, was not a fundamental principle in Roman policy, nor a national ambition. "It was usually the democratic element which favoured a policy of expansion," he decides, but when he goes on to say, "the popular imagination catches at the vision of expansion, victory over distant peoples, and mere bigness," he is dangerously near the "anachronistic generalizations" which he condemns. The lure of increased tribute, however, did appeal more strongly to the plebeian assembly than to the conservative and responsible senate. Dr. Frank finds five crises in the foreign policy; the victory over Veii, achieved independently of the Latin league, which led to Roman supremacy in Italy; Rome's interference in Sicily in 268 B.C., through which she won her first tribute-paying dependency and set aside the federal principle; the Second Punic War, proving her strength in conquest; her entrance into Eastern politics, when the *ius fetiale*, which allowed war only in defence of the city and her allies, was broken; and the passing of the Gabinian Law, which gave Pompey his first great power.

Rome's foreign policy was based on a system of alliances, at first unwritten alliances of blood, then permanent political alliances made by treaty, then alliances involving protection and expansion. The alliance with the Mamertines introduced the new element of making friends with freebooters.* Eastern politics led to a new type of alliance, involving short-term *foedera*, after the custom of the Greek states. In 196 B.C. the philhellenic spirit was strong enough at Rome to give these *amici* absolute liberty, but their weakness in self-government, the complications caused by Antiochus's diplomacy, the element of booty-sharing, the vigorous conservatism of Cato, the bequest of Attalus and the Asiatic wars, emphasizing the theory of *dominium in solo provinciali*, all tended to strengthen the Roman idea that an ally was a subject.

Interwoven with the system of Italian alliances is the Roman system of colonization. The Romans were no seafarers, and their colonies were confined to Italy. In 338 B.C.

*The author's comment is interesting, in view of the American attitude toward Mexico: "States . . must deal with existing nations as they find them."

the far-sighted statesman gave the conquered cities citizenship, but without representation, and the Romans, when they had acquired a tribute-paying province began to look upon their Italian allies and colonies also as subjects. Sicily was taken over as a tribute-paying dependency, not as a colony with a share in the national idea, and this new departure involved tribute-collectors, a separate judicial system for Roman citizens, and a larger standing army. Roman colonial policy was at its worst in Spain. Like the American policy with their Indians, and unlike the Canadian practice carried out by the Mounted Police, the Romans had one law for themselves, another for the conquered people, and Roman generals fell into trickery and treachery, meeting the Spanish tribes with their own weapons, and bringing the Roman name into disrepute. Romans before Caesar showed little genius for imperialism in the British sense. Struggles at Rome prevented any consistent policy in the East. C. Gracchus attempted colonization in Africa, but the Roman people would not undertake the work of settlers. Pompey was more successful in colonizing the defeated pirates, and Caesar, in extending the citizenship to conquered tribes in Gaul, showed the first ability in colonization since 338. His policy was carried on by Augustus, and Gaul, in part self-governing, became in many ways the soundest part of the Empire.

Dr. Frank points out three important elements in Roman expansion, the philhellenic spirit, the influence of commerce and financiers, and the military element. Philhellenism, the desire to be recognized by the Greek cities no longer as barbarians but as allies, had no small influence in urging Rome to her first Eastern war; it was responsible for the liberation of the Greek cities at the end of the war, and when the senate had returned to "practical politics" it still was seen in the policy of individual governors.

When Mommsen and Wilamowitz insisted on commerce as the vital influence in shaping Roman foreign policy they were perhaps unconsciously thinking of ancient Carthage or of modern Britain. Dr. Frank examines the evidence of Rome's commerce, and finds, from archaeological excavations, early treaties and inscriptions, that Roman commerce before the first century B.C. was too insignificant to affect the foreign

policy of the Senate. It was not even powerful enough to have any measures taken to check the constant piracy, which was not suppressed until 67 B.C. From detailed statistics Dr. Frank concludes that the influence of *equites* and *publicani* in shaping Roman foreign policy has been much over-estimated. The Senate always had difficulty with finances from the time of its first tribute-taking in Sicily, and with the increase in dependencies tax-gatherers became necessary. The contract system of collecting revenue was adopted by C. Gracchus in 123 B.C. Then, and not till then, the *publicani*, who were usually *equites*, took charge of these new contracts, gained immense wealth, and, acting as a political unit, controlled the foreign policy in the days of Crassus and Pompey. The Brutus of history is a sad comment on the Brutus of Shakespeare.

The military element was always important at Rome, but until the second century there was no question of booty. In the East the generals learned the value of plunder, and Marius, recruiting from all classes, was the first to secure the army as his own weapon. Territorial expansion, with large armies, and without the check of strong, responsible colonies, was bringing about the inevitable result of the military dictator and the overthrow of the constitution.

Dr. Frank has dealt very slightly with the element of personality, but one of the ablest chapters is on "Caesar and World Conquest." Admitting the unscrupulous ambition of Caesar's early days, he speaks with rare enthusiasm of his development and unmatched achievement as soldier and statesman. With the mention of Augustus and the early emperors the book closes. Roman imperialism had achieved recognition.

W. GORDON.

CURRENT EVENTS.

THE WAR.

There can be but one subject for the writer of *Current Events* in this issue. Many things have happened during the past three months. The Panama Canal has been opened; the saintly Pius X has died, and Benedict XV sits in the seat of St. Peter; the Premier of Ontario has closed a life of honourable public service; but the note of one deep overmastering pipe drowns every lesser reed—the war.

Thoughts come thronging into one's head, heroic and cynical, uplifting and mean, bracing and bitter, quotations from the Bible and from blue-books, and behind all the thoughts one deep tragic note of horror and amaze. Is it out of place to recall the saying of the old Lord Melbourne some years after the Reform Bill, that "all the d——d fools were on one side, and all the clever Johnnies on the other, and the d——d fools were right." The saying is light, but not the note it strikes; for the war brings no bitterer thought than this, that the men who believed in culture, and in humanity, and in the steady uplift of the human soul through the kindly intercourse of nation with nation, were wrong; and that those who thought ignobly of the soul, and sneered at our imaginings as Utopian dreams, who almost succeeded in making "pacifist," which stands for the noblest of all ideas, synonymous with coward, which stands for the basest, were right. The war gives the lie to the believer in the upward march of humanity. We asked for righteousness, and behold oppression, for judgment, and behold—the cry from butchered Louvain.

THE BALANCE OF POWER.

Faced with this huge crime against humanity, we ask for the criminal. In a very real sense, each one of us may say to himself: "Thou art the man!" Gradually every nation in Europe had developed a deep jealousy of its neighbours. Larger and larger grew the armies and the navies; more and more perfect the organization for war. In face of this we propagandists of peace did little save ingeminate "peace, peace,"

or prove that war was financially undesirable. The vigour and the swing, the kick and the push, the organization that a touch could rouse to action, were with the baleful powers who despised "the lilies and languors" of peace. The contribution of the nineteenth century to political organization had been the self-conscious nation; more and more we allowed the nation to assert its self-consciousness against its neighbour, not in a patriotic rivalry for good, but in mere satanic pride and bellicose highness of heart. Our only hope for peace was in the balance of power, a clumsy balance which all could with difficulty preserve and one could with ease destroy. The balance came to mean that if one power increased its army or its navy, its neighbours increased theirs two-fold; if Germany enlarged her peace establishment, France replied with the Law of Three Years Service; if England attempted to arrest the fatal race, and to curtail her ship-building programme, Germany took it not as a call to peace, but as a sign of weariness and decay. As the armies and the navies and the jealousies piled up, Europe became a super-saturated solution, peaceful to the eye, but shivering into crystals at a touch. There were balances within the balance, especially that of Slav and Teuton in the Balkans; it was indeed out of this lesser fire that the spark finally leaped which kindled Europe. And—let us not deceive ourselves—we loved to have it so. In our heart of hearts most of us identified patriotism with hatred of our neighbour, and esteemed the man with the gun more highly than the man with the hoe. In crass, unimaginative content we saw the war cloud grow darker and darker, and did not realize that it must break. It has broken now, and who is there without sin among us to cast the first stone at journalist or at Kaiser?

THE FAILURE OF SECRET DIPLOMACY.

The truth, which many saw, but which had not yet kindled us to belief, was that our old conceptions and shibboleths of patriotism had grown inadequate. Till a century or so ago, the whole duty of the organized state was to preserve its existence against the alien and to administer justice to its subjects. The whole duty of man as citizen consisted in obedience to the law and preparation for service against the King's enemies. But with the enormously increased complexity of national life in

the past century, a new and long list of affairs, formerly managed privately or not at all, was taken up into the activity of the state. The need for war grew less and less, the need for social service more and more. International relationships and the need of international peace grew in complexity *pari passu*. But while we made an increasing attempt to rise to the new calls of social service, we kept them apart from our old conceptions of patriotism, which we did not really enlarge.

This obsolete and inadequate conception of the state was maintained by the diplomatists. In domestic affairs the rule of the democracy through a representative parliament and a responsible executive had become absolute, but foreign affairs were still carried on by an oligarchy, drawn from a narrow circle. How narrow the circle is may be judged from the exclusion from it, in Great Britain, of all candidates with less than an annual income of £400. We plumed ourselves on having "withdrawn foreign affairs from party politics," when in reality we had merely handed them over to an irresponsible clique. And the diplomatic tradition is a bad tradition of suspicion and intrigue, dating from the days of intense national and personal animosities. For the diplomat foreign relations are a game, in which each seeks to put the onus on the other. The object of the diplomat is not to keep the peace, but to prove the other man a liar; at best he desires, not to find a permanent solution, but to smooth things over; like the Chinese mandarin, his object is to save his face; hence the moment we approach the speeches and the White Papers in which are contained the negotiations leading up to the war we are in an atmosphere of international lies of omission and of commission as unabashed as those of the meanest Canadian or American "grafter," and made the more nauseating by the consummate politeness maintained throughout.

From participation in this diplomatic mendacity Sir Edward Grey cannot be wholly acquitted. Nobly as he played for peace a losing game in which his enemies held the higher cards, he cannot be wholly absolved of *suppressio veri*. Almost from the beginning of his tenure of office—if indeed he did not merely take over a legacy from Lord Lansdowne—he had secretly committed England far more definitely to France than the country or than Parliament had any idea. From his speech

of 3rd August and from the White Paper we learned with something like stupefaction that without consultation with the Cabinet, without indeed revealing the matter to the Cabinet till long afterwards, the Foreign Secretary had converted the *Entente* with France into the most binding of all alliances. We had thought that the difference between an *entente* and an alliance was that an *entente* merely implied an entrance into cordial relations, whereas an alliance involved a definite union against some other person or nation. At most we had thought of an *entente* as an agreement for a particular purpose, such as our backing up of France in Morocco in return for a free hand in Egypt. Now we found that according to Sir Edward Grey an *entente* consisted in an exchange of signed cheques, with the space for the amount left free for the receiver to fill in. In an alliance the obligations and the conditions are definitely laid down; it is a cheque for a definite sum, cashable only on definite conditions. Under the *Entente* Sir Edward Grey and the French ambassador had arranged for consultations between French and British naval and military experts, and these had resulted, *inter alia*, in the concentration of the British fleet in the North Sea and the French in the Mediterranean. From that moment our honour was pledged. We had given France a blank cheque. M. Cambon, who is what is known in his own tongue as *fin* and in Dutch as "slim", must indeed have chuckled as Sir Edward walked into that little parlour. It is true that in 1912 they gravely saved their faces by assuring each other that this did not "commit either government to action," and was not "an engagement to co-operate in war." As well give a man a signed blank cheque, and assure him that you are uncommitted. If M. Cambon refrained from winking his left eye as he wrote those words, he must be more or less than human.

Thus while Sir Edward Grey worked for peace, he must in his heart have known that if his efforts failed, we were far more deeply committed to France than he admitted or than the country knew. Doubtless his motives were good—probably in the main a wish to increase the hope of peace by not attempting to force the pace. But when on 1st August the German Ambassador, seeing that a continental war was inevitable, pressed him to state the terms on which England

would consent to remain neutral, the Foreign Secretary could only squirm. "Will England remain neutral if Germany gives a promise not to violate Belgian neutrality?" said the Ambassador. "I replied that I could not say that; our hands were still free, and we were considering what our attitude should be"

"The Ambassador pressed me as to whether I could not formulate conditions on which we would remain neutral. He even suggested that the integrity of France and her colonies might be guaranteed.

"I said that I felt obliged to refuse definitely any promise to remain neutral on similar terms, and I could only say that we must keep our hands free."

Our hands were already tied, and he knew it.

THE RESPONSIBILITY OF GERMANY.

But the straits to which diplomatic exigencies reduced one of the most high-minded men in England must not blind us to the utter impossibility of England's neutrality. The subsequent conduct of Germany shows that not for a moment would she have acquiesced in the proposals of an ambassador to whose words she had already given the lie. The balance of power, "that foul idol of our diplomacy" as John Bright called it, does at least stand for the preservation of the smaller nationalities. For the preservation of one smaller nationality Great Britain, Germany, Austria and France had given a definite pledge. Asked, in view of this, and of the Ambassador's offer, whether they intended to respect the neutrality of Belgium, France gave the fullest possible assurance (White Paper, No. 114); Germany first paltered, and finally refused. It is true that she offered Belgium to make reparation at the end of the war for any damage done during its progress. But what reliance can be placed on the promise of a promise-breaker? At the final interview between the British Ambassador and the German Chancellor, the utter inability of the latter to understand our position shows his view of an obligation. "I found the Chancellor very agitated. His Excellency at once began a harangue, which lasted for about twenty minutes. He said that the step taken by His Majesty's Government was terrible to a degree; just for a word—'Neutrality,' a word which in war time had

so often been disregarded—just for a scrap of paper Great Britain was going to war on a kindred nation who desired nothing better than to be friends with her. . . .

“I protested strongly against that statement, and said that, in the same way as he and Herr von Jagow wished me to understand that for strategical reasons it was a matter of life and death to Germany to advance through Belgium and violate the latter's neutrality, so I would wish him to understand that it was, so to speak, a matter of ‘life and death’ for the honour of Great Britain that she should keep her solemn engagement to do her utmost to defend Belgium's neutrality if attacked. That solemn compact simply had to be kept, or what confidence could any one have in engagements given by Great Britain in the future? The Chancellor said, ‘But at what price will that compact have been kept? Has the British Government thought of that?’ I hinted to His Excellency as plainly as I could that fear of consequences could hardly be regarded as an excuse for breaking solemn engagements.” (Report by the British Ambassador of his final interview with the Chancellor).

The degradation of German ideals was still more terribly brought out by the Chancellor's speech to the Reichstag on 4th August, when he said:

“Gentlemen, we are now in a state of necessity, and necessity knows no law! Our troops have occupied Luxembourg, and perhaps are already on Belgian soil. Gentlemen, that is contrary to the dictates of international law. It is true that the French Government has declared at Brussels that France is willing to respect the neutrality of Belgium as long as her opponent respects it. We knew, however, that France stood ready for the invasion. France could wait, but we could not wait. A French movement upon our flank upon the lower Rhine might have been disastrous. So we were compelled to override the just protest of the Luxembourg and Belgian governments. The wrong—I speak openly—that we are committing we will endeavour to make good as soon as our military goal has been reached. Anybody who is threatened, as we are threatened, and is fighting for his highest possessions, can have only one thought—how he is to hack his way through.”

Yet even in judging Germany we must look for the cause. The speech is not the speech of a brigand; it is the speech of a

man in the grip of a theory, and of a theory forced on him by fear.

Germany is a country to which we all owe much. In music, in poetry, in philosophy, in religion, in jurisprudence, her contributions to human culture and human progress are immortal; in the progress of modern science she has played a great part; in the adaptation of that science to the increase of human comfort an even greater. But her geographical position has been unfortunate. With the slowly-consolidating Slav on one side and the turbulent Latin on the other, she had won her unity by the sword, and so keenly did she feel her position that the sword became her master. The pressure, especially at court, of the military set, became stronger and stronger. The sense of the perfection of the instrument made the desire for its use more and more imperative. The wonderful progress of science, with its myriad triumphs of mind over matter, unaccompanied by any corresponding advance of morals, but rather by an almost complete break-up of the old faiths and the old sanctities, increased the worship of force. Nietzsche, with his denunciation of Christianity as a "slave morality," his laudation of the Superman with his "master-morality" that smote and spared not, gave the new tendencies a philosophy. The theory of evolution was brought in to explain the "manifest destiny" of the Fatherland, a destiny which was impressed on every school-child. Professors of History proved Charlemagne a German, and filled the nation with the glories of the Empire of Otto and of Barbarossa. On biological analogies it followed that the instrument of evolution must be war and the survival of the fittest. A score of writers, of whom Von Bernhardi is the latest, taught the necessity of war, and extolled its virtues. "War," says Bernhardi, "is a biological necessity of the first importance, a regulative element in the life of mankind which cannot be dispensed with, since without it an unhealthy development will follow, which excludes every advancement of the race, and therefore all real civilization"

"War, in opposition to peace, does more to arouse national life and to expand national power than any other means known to history."

The great financial prosperity of Germany in the last thirty years increased her arrogance and materialized her mor-

ality. The increase of German profits became for many identical with the spread of German morality and indeed of righteousness. The hard spirit of Prussia triumphed over the milder Teutonism of the south.

Such are some of the elements in the doctrine which has issued in the sack of Louvain and the killing of hundreds of civilians at Termonde, with less compunction than that of an examiner plucking a student. Germany set herself to be not the Nazareth but the Nineveh of the nations. In 1900, at the outset of the expedition to Peking, an Emperor, sincerely if flamboyantly Christian in his private life, set before his soldiers as their ideal not Christ, or even Frederick the Great, but Attila. The universities, which had played so great a part in the upbuilding of Germany between Jena and Sedan, joined in the cry, and a dream of world-empire, over which German culture had been spread with the sword, became universal. After 1870 the chief opponent of this ideal was no longer France. German fear was of the Eastern thunder-cloud, of the Cossack menace with the dread of which the Pomeranian mother stilled her restless child; her hatred was more and more turned to England, haughty and complacent in her island fastness, occupying the trade routes and the vacant spaces of the world, and shutting out Germany from that "place in the sun" which was her due. More and more the ideal of a Germany supreme in the realm of intellect and of the spirit ceased to satisfy; more and more the hard militarism and materialism of the Prussian became predominant. The Devil had taken Germany up to an exceeding high mountain, and had shown her all the kingdoms of this world and the glory of them, and Germany had made her choice—and the choice was not that of Christ. Thus it is false to represent the war as one waged not with the German people, but merely with the Kaiser and the military caste. We war not against a caste, but against an idea, the popularity of which is attested by every recent visitor to Germany. Mr. A. E. Zimmermann, an English socialist of German descent, well speaks of "the persistent indoctrination among the most docile, the most long-suffering, and the most over-educated people in Europe of a false, wicked and arrogant theory of human society and government." That hard-fighting right wing of General Von Kluck, which has hurled itself in close order upon every

modern engine of destruction, was not driven on against its will; it had an inspiration which the drill-sergeant may have symbolized, but which he did not create.

This theory, with its astonishing blindness to moral forces, explains the utter break-down of German calculations. Bismarck was dead, and "the small change of Bismarck" at the court and in diplomacy, misread the signs of the times in the light of their theory. Not that it triumphed without a struggle. Great forces, national and international, made for peace. The situation bore some resemblance to the strategical problem presented to England and France early in September. The allied forces of peace were striving to hold their intrenchments till the steam-roller of Socialism swept over the militarists. Alas! they failed. For a time the Emperor, in spite of his dramatic flamboyancies, stood for peace against the unclean Camarilla which surrounded him. So too did Von Bethman Hollweg, the Chancellor, and Prince Lichnowsky, the Ambassador at London. But the mental atmosphere which they breathed, the mental food which they ate, changed and contaminated them almost unknowing, and when temptation came, they fell.

What must the situation have seemed to German diplomacy in July of this year? Russia had not yet recovered from the Japanese War, and was internally perturbed both politically and economically; in 1909 the threat of German hostilities had brought her to her knees; France had just had a series of military scandals and revelations of terrible gaps in her preparations and, as the German ambassador at Vienna openly said, "was not at all in a condition for facing a war." Belgium, it was felt by these contemners of the ideal, would obviously come to heel before a display of overwhelming force. England was controlled by a somewhat sentimental Liberalism; her Government had been reduced to shuffling impotence by a few hundred hysterical women; Ireland was on the verge of civil war. India was notoriously disaffected, and the Mohammedans, the most loyal section, might be stampeded by Turkey, who had been successfully wrought on both by threats and cajolery. Of the English colonies South Africa was in the control of men who only a few years before had sought for German aid against the mother country; in Canada a strong government had been unable to force through Parliament a measure granting to the

mother country the aid for which she had asked, and had in the following session made no attempt to reintroduce the bill.

It was all so plausible, and so ingeniously wrong. In spite of her over-clever press campaign, Germany found herself without a friend in the world, save Austria-Hungary and Turkey. France and Russia proved resolute and unafraid; Belgium showed that there was one thing for which even the most deeply commercialized of nations would fight to the death; Italy declared her neutrality, as Von Bernhardi had foreseen; Great Britain at once forgot her domestic bickerings. Mr. Redmond showed himself fully aware that the little finger of Germany would be thicker than the loins of England; the very suffragettes put their offices at the service of the Government. Over the seas the young Dominions, whom Von Bernhardi had declared could be "completely ignored in any European war," leaped to meet the insolent defiance. India became one as never before in her history.

The cause of quarrel was ingeniously chosen with a view to keeping England neutral, for the plan of the German Polyphemus had long been to deal first with the continent, and to eat England last of all. Austria suddenly sent to the small Slav state of Serbia an ultimatum, the acceptance of which implied national suicide, and gave her only forty-eight hours in which to choose between verbal acceptance and war. That Austria ventured to do so without Germany's approval only a fool will believe. Had Austria desired peace, had she merely wanted satisfaction from a turbulent neighbour, she would at once have accepted the unexpectedly humble reply, which agreed to the greater part of the ultimatum, and offered for the rest to submit to the judgment of the Hague tribunal. But Austria did not want peace; she did not even want satisfaction from Serbia for her wrongs; she wished to humiliate the Slav, as she had humiliated him in 1909, when with the Kaiser at her side "in shining armour" she had compelled Russia to leave Bosnia and Hertzegovina to their fate. Whether Germany and Austria really wanted war, or only such another coup, we do not know. They would probably have preferred the easier way, but would not yield an inch to avoid the other. Neither power made any really positive suggestion tending towards peace. Sir Edward Grey on the other hand suggested every

manner of mediation, and achieved the triumph of winning over Italy to support his views. When one suggestion after another was rejected, instead of taking umbrage he offered to accept "any method that Germany could suggest." The only answer was that the matter concerned Austria and Servia alone, and that Germany was going to the limit in counselling moderation at Vienna. *Credat Judaeus Apella, non ego*, for meanwhile Austria and Germany went on making military preparations, and lied, and lied, and lied. With her troops on the point of bombarding Belgrade, Austria said that the rejection of her ultimatum would be followed not by warlike "operations," but merely by "preparations." With German officers on leave flocking back to the standards, the British ambassador in Berlin wrote to Sir Edward Grey: "His Excellency [the German Secretary of State] denied German Government had done this, but as a matter of fact it is true." Germany claims that the war was provoked by causeless Russian mobilization. Russian diplomacy has a bad name for lying, but its offers were fair, and no attempt was made to take advantage of them. Days before Russian mobilization had begun, Sir Edward Grey suggested that the rival powers be requested to leave the matter under discussion by Germany, Italy, France and Great Britain. Russia at once agreed, Germany at once refused. Even at the last Berlin could have ensured peace in a moment by promptly accepting the Russian proposal of 30 July, than which nothing could be more fair; it is described in a telegram of 30 July from the British Ambassador at St. Petersburg to Sir Edward Grey:

"German Ambassador had a second interview with Minister for Foreign Affairs at 2 a.m. when former completely broke down on seeing that war was inevitable. He appealed to M. Sazonoff to make some suggestion which he could telegraph to German Government as a last hope. M. Sazonoff accordingly drew up and handed to German Ambassador a formula in French, of which following is translation:

"If Austria, recognizing that her conflict with Servia has assumed character of question of European interest, declares herself ready to eliminate from her ultimatum points which violate principle of sovereignty of Servia, Russia engages to stop all military preparations."

The responsibility for all the blood that has been shed, for the desolation in Belgium and in the pleasant land of France, and amid the kindly peasants of East Prussia and of Poland, lies at the door of the men who saved their faces by rejecting that offer. In the path of peace there lay, in the words of an English weekly which laboured till the last in the cause of peace, "a force so unintelligent and so confident in its own strength as to resist with proud self-sufficiency all attempts to convert it into an instrument of humane policy for Europe. That force was German Militarism." (The Nation, Aug. 15). To crush that force even an alliance with Russia was a small price to pay.

Even had we been false to our plighted word, and looked on while Louvain flamed, and France was over-run, and a German fleet within sight of England bombarded Calais and Boulogne, England must have gone into the fight to strike a blow for freedom and for democratic civilization. We fight for ordered freedom against ordered slavery, for Runnymede against Zabern. Much nonsense may have been talked about the Rights of Man, but after all they exist, and it is for them that we fight.

IMPERIAL UNANIMITY.

Many more things remain to write of; the crash of credit, and the spread of State Socialism; the rise of food prices, and the need of co-operation against the profiteers; the Japanese alliance; the attitude of the United States; the bringing of Indian troops to Europe, with all the fearful questions involved; the reconstruction of Europe after the war. I have room to speak of only two more questions.

The first is the splendid dignity with which the English people faced the crisis. I was in front of Buckingham Palace on the night of Tuesday, 4th August, when a Police Inspector came quietly out, and told us that England was in a state of war with Germany. I was in England during the greater part of August and September. I did not think any people could have faced a great shock with such quiet nobility. There was nothing hectic, nothing rhetorical, only a great deep resolve to see the thing through. The ranks closed up at once. English, Scotch, Irish, Welsh; Churchmen and Nonconformists and free-thinkers; suffragettes and anti-suffragists; all had but one

thought in the national peril. Party government ceased to exist. Tory, Liberal and Labour joined in the recruiting committees; Mr. Bonar Law was consulted on the letting of contracts, and Mr. Austen Chamberlain on the financial exigencies and remedies. With the exception of a few extremists of no political importance, such as the so-called Independent Labour Party on the one hand, and Mr. Maxse of *The National Review* on the other, British opinion, with unanimous patriotism, has rallied to the support of the government. There has been nothing like it in history save perhaps under Pitt in the Seven Years' War. Cromwell had no such unanimity against Spain; Pitt's son had nothing like the support against Napoleon that Asquith has had against Wilhelm.

Canada has been worthy of her traditions. With somewhat more of noise and open enthusiasm, as befits a younger and more expansive people, but with equal resolution, we are sending our men and our resources. From under the shadow of the monument to Wolfe and to Montcalm they go forth. This must continue. By Christmas we must have 100,000 men in training; by April, should the war still rage, that 100,000 must be on their way to the front; for we are fighting not merely for Great Britain; not merely for the Empire; we are fighting in the liberation war of humanity.

W. L. GRANT.

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JANUARY, FEBRUARY, MARCH, 1915.

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CANADIAN OCEAN STEAMSHIPS AND THEIR EARLY DIFFICULTIES

—H. Smith.

MECHANICAL MEASUREMENT OF TIME—N. F. Dupuis.

THE PLACE OF THE CANADIAN-BORN IN THE EMPIRE—Logie Macdonnell.

ALFALFA, THE CONQUEST OF THE AIR—C. C. James.

FIFTH F. C. C. ENGINEERS AT VALCARTIER—A Graduate.

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CONTENTS

	PAGE
ARCHIBALD LAMPMAN	233
<i>BERNARD MUDDIMAN.</i>	
CANADIAN OCEAN STEAMSHIPS AND THEIR EARLY DIFFICULTIES	244
<i>H. SMITH.</i>	
MECHANICAL MEASUREMENT OF TIME	254
<i>N. F. DUPUIS.</i>	
THE PLACE OF THE CANADIAN-BORN IN THE EMPIRE	265
<i>LOGIE MACDONNELL.</i>	
ALFALFA, THE CONQUEST OF THE AIR	280
<i>C. C. JAMES.</i>	
FIFTH F. C. C. ENGINEERS AT VALCARTIER	294
<i>A GRADUATE.</i>	
SONNET	298
<i>ALEX. LOUIS FRASER.</i>	
THE ORIGIN AND HISTORY OF THE HEBREW LANGUAGE	299
<i>H. T. WALLACE.</i>	
CURRENT EVENTS	317
German-American Newspapers on the War. <i>JAMES CAPPON.</i>	

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VOL. XXII

January, February, March, 1915

No. 3

ARCHIBALD LAMPMAN.

ARCHIBALD Lampman was one of the group of young Canadian poets born, while the idea of a federated British North America was germinating in the minds of Canadians. Thus he escaped the incipient stage of Canada's colonial days and was born after the period of its literary crudities. For the majority of writers born at this epoch were essentially men of native university training. They were heirs to the worlds of the European poets' creation. All of them, too, were highly coloured mentally by a study of the English poets of beauty, who, since the appearance of Coleridge's magical poems, have handed on the light of Art like the Athenians of old in their torch race. And Lampman himself is no exception to the rule. Indeed he was so overpowered by the influence of one English poet—Keats—that, in his humble homage to the subtle priest of Suffism, he has frequently essayed, as I shall endeavour to show, a mode of expression at once alien and hurtful to his own bent.

Son of the Anglican Rector of Morpeth, Lampman was born on November 17th, 1861. He came of German and Dutch descent and this should be not forgotten, for it accounts in no small degree for that meticulous minuteness of detail in much of his verse, for its calm nonchalance and unruffled flow of thought.

He was something of a delicate valetudinarian all his life, for, when quite a child, he was afflicted by a severe attack of rheumatic fever from the effects of which he never really rid himself. Indeed, there is a note of this lingering about all his verse. He had the delight of a sick man in nature and healthy things, in the splendid beauty of long summer days. He had, too, a sensibility for bright colour and choice form, which is not seldom attendant on such states of health. But he had not

that hectic, feverish sensuousness that marked the outlook of Keats, whom he mistakenly took for his model. Rather his is a sombre, Teutonic mind rapt in a continual meditatio mortis in all his best work, not so much expressed, but to the attentive listener always overheard. Again it is never work of a vociferous, animally robust personality—it is too wistful, too tender for that.

He was sent to Trinity College school at Port Hope, Ontario, one of those big private boarding schools, which are run on English Public School lines by English masters. The leading feature of such an early education was a careful drilling into Latin and Greek grammar; for the active side of athletics was rather discountenanced as far as young Lampman was concerned owing to his precarious health. From this atmosphere, wherein only the really robust benefit, he came to Toronto as a student at Trinity College, as one who had been through the rougher usage of a boarding school. Indeed, at Toronto, the name of Lampman gathered to itself something of the reputation of riotousness so dear to the heart of every undergraduate. As a matter of fact it was simply his poetic temperament trying to express itself; and, since he had come from the rough ways of a boarding school, it naturally, for a time, revealed itself crudely. This in the case of a French boy, for example, would have been impossible. He was, however, recognized at college as a brilliant youth, winning his way through by means of scholarships, which were very necessary, for misfortune and poverty had already overtaken his family.

At college he began to write, but, like many poets, his first efforts were in prose. As a result of his labours one or two chapters of a novel, he afterwards discarded, were written. But prose was not his metier. It was merely a training for his verse work; while his academic reading in Latin and Greek was to help to give his verse that polish so rarely found in Canadian works. But, unfortunately, Latin and Greek are not nearly such valuable assets as the fruits of a technical education. Consequently on leaving college, like so many others, he drifted into teaching, the most heart-breaking and soul-dissecting occupation an artist could find. His assistant mastership at Orangeville High School happily did not last long; for, in 1883, through friendly influence, he obtained a clerkship in the Post Office Department of the Dominion Government at Otta-

wa. It was a haven of refuge into which far from the busy world's clamour this dreamer was glad to creep, content with the poor pay, because of the short daily task.

Nothing further was to trouble him all his life except poetry. His happy marriage in 1887 and his election in 1895 to the Royal Society of Canada were merely incidents tending to consolidate his poetic enthrallment. In actual biography there is nothing else to relate, for in the Post Office Department he remained until he died on February 8th, 1899, without any further wanderings save those of the spirit. However, if life did not give him much scope for new sensations, his intellect was always adventuring. He ordered his days in accordance with his expressed wish:

Oh for a life of leisure and broad hours,
To think and dream, to put away small things,
This world's perpetual leaguer of dull naughts;
To wander like the bee among the flowers
Till old age find us weary, feet and wings
Grown heavy with the gold of many thoughts.

He delighted to read his classice in peace:

To till the old world's wisdom till it grew
A garden for the wandering of our feet.

And in the same way we can picture him through the passionately hot days of summer that bake and burn the countryside round Ottawa, a leisurely wanderer up the charming Welsh scenery of the Gatineau valley or down the Ottawa River or among the Rideau Lakes. It was not for him to venture further afield to the bush, much though in spirit he may have longed for it.

A year after he entered the Civil Service, Lampman mailed to Charles G. D. Roberts, then editor of "The Week," a literary periodical, in Toronto, two poems, which the editor with excellent discrimination accepted. Hence forward Lampman continued to send his poems at intervals to periodicals, particularly those of the better American type like Scribner's, where they received a sympathetic welcome. Other publication for the time he was unable to attain through lack of funds until 1888, when his wife received a legacy, which was generously spent in issuing locally his first little volume, "Among the Millet."

This volume has a freshness and sweetness his rather limited muse never again attained. He never even maintained the same level. It contains, perhaps, his best work and there is the dew of the dawn on it. And as we leaf its pages "The Frogs", "Heat", "Among the Timothy", "Midnight" and "Between the Rapids" stand out beyond the others. Some of its longer poems, perhaps, are the least satisfactory. For instance, they are mostly exercises in imitation, like that unsuccessful narrative "The Monk", palpably modeled on Keats' well known "Eve of St. Agnes."

In the circumscribed ground of the sonnet Lampman is peculiarly happy in his very first efforts. His minute method of piling up details makes them exquisite medaillons of song. In this mode "The Frogs" is composed of five sonnets, each like the perfectly carved bead of a rosary:

Breathers of wisdom won without a quest,
 Quaint uncouth dreamers, voices high and strange;
 Flutists of lands where beauty hath no change,
 And wintry grief is a forgotten guest,
 Sweet murmurers of everlasting rest,
 For whom glad days have ever yet to run,
 And moments are as aeons, and the sun
 But ever sunken half-way toward the west.

Often to me who heard you in your day,
 With close rapt ears, it could not choose but seem
 The earth, our mother, searching in what way
 Men's hearts might know her spirits' inmost dream;
 Ever at rest beneath life's change and stir,
 Made you her soul, and bade you pipe to her . . .

All day long, wherever pools might be,
 Among the golden meadows, where the air
 Stood in a dream, as it were moored there
 For ever in a noon-tide reverie,
 Or where the birds made riot of their glee
 In the still woods, and the hot sun shone down,
 Crossed with warm lucent shadows on the brown
 Leaf-paven pools, that bubbled dreamily.

Of far away in whispering river meads
 And watery marshes where the brooding noon,
 Full with the wonder of its own sweet boon,
 Nestled and slept among the noiseless reeds,
 Ye sat and murmured, motionless as they,
 With eyes that dreamed beyond the night and day.

These Shakespearean sonnets may not be packed with the sad thoughts of a Pascal or the plangent utterances of a Lucretius, but seldom has this form been handled with greater musical dexterity. The exactness, too, of the natural imagery is astonishing. Lampman was one of those naturally endowed with "the lust of the eye." This lends often to his best verse a vivid richness in its vignettes of the natural world. Town-bred he has a hunger for nature, a passion for the soil. As in life he loved to get in the woods and leave behind the fever and fret of petty official life in the mediocre atmosphere of a village capital; so, in his verse, he loves to write of the blue bird peeping from the gnarled thorn, of the vesper sparrows at the forest hem, of the purple-bosomed orange cone-flowers. He thought he saw in nature the eternal anodyne for every carking care. Take his poem "Among the Timothy." It is an excellent example of this belief of his in the restoring faculty of nature. He tasted nature as an epicure tastes a *bonne-bouche*. With what joy he smelt the keen perfume of the ripening grass and feasted on summer sounds. The shrill piping hylas, the warbling vireos, the crazy fiddling of the crickets and the creaking of frogs on the woodland pools—all touched some respondent chord in his own nature. He delights in the snowy trilliums or the rosy tops of fleabane veiled with dew, the fields black with the mould and brown with the loam. Sometimes he comes away with an impression of a landscape such as "a vapour of azure distilled on the opaline green of the fields." The whole movement of the seasons from the bleak Ontario spring through the arid passion of its summer, the gorgeous pageant of the Fall, to the long white winter evokes his salutation. He is the poet of Ontario. In the soundless woods of winter, where the wind alone makes secret stir, he wanders drawing his thoughts closer around him like a cloak ensnared by the very austerity of the beauty of this crystalline world. Secret as the ice-sheeted, snow-hid streams he plods on a veritable John O'Dreams. June, September, April or Midwinter he has celebrated them all. He has dozens of little vignettes of this pageant of nature, but his best, it seems to me, are those of winter:

Down the frozen street to market
Come the woodmen team by team,

Squeaking runners, jolting cordwood,
Frost-fringed horses jetting steam—

Where the frosted creamy splendour
Of the morning slants and shines
On smooth fields and sheeted rivers,
Stretching to the western pines . . .

Something of that solemn melancholy wail that pierces through every phrase of the Russian poets, the voice of the silent whiteness of the snow clad steppes of the north moans a little in all Lampman's winter pieces. The ancient runic call of ice and snow beneath a pallid moon and silver stars croons wistfully as he recalls:

The spaces of a white and wintry land
Swept with the fire of sunset

The beauty of silence, the vastness of dreams, the pessimism of human hopes wails forth half-expressed as he broods on the sad, still wastes of the frozen world.

Perhaps "Between the Rapids" has a far more human interest than the majority of these yards of natural description. It has the romantic charm of Canada's heroic age. Yet it is modern in its setting, that is to say, it is as old and as modern as God's hills and rivers and man's elemental emotions. It is the song of a home-sick voyageur, a French-Canadian lumber-jack, if you like, paddling past his native village on the river "between the rapids in the evening dusk." Full of melancholy recollection he hears the familiar "loitering bells, the lowing of the cows." He remembers old friends, black-eyed Jeanne whose tongue was never still, wrinkled old Picard, pale Lisette and all the other homely hearts that never cared to range. He wonders vaguely, if the same lips still repeat the same old shouts. But nothing can hold him by any sacred bond of kith and kin, of love or regret, for he is the born wanderer as restless as the river that bears him on.

I have already referred to the longer poems in this volume as exercises of a youthful poet in imitation. There is one particular aspect of this that it would be as well to deal with at once. Keats wrote *Endymion* and other pieces of pretty paganism according to Wordsworth. Lampman, like many a later poet, who has read Theocritus and Euripides in his boyhood, has also turned more than once to the dead classic past

in the manner of Keats. But his Hellenic poems are no more Hellenic in their passion than the memories of any average lad who has wasted (if you like) hours with a grammar and Liddell & Scott. Keats, who knew nothing of Greek paradigms, was a born Greek like Pierre Louys to-day. Lampman, on the other hand, was no more imbued with the Hellenic spirit than he was with the Red Indian. Consequently his "Athenian Reverie", for example, is really nothing more than a "Lampman Reverie," and is totally devoid of the Pagan heart's emotions. In other words, it is Lampman in a pose and is remarkable only for a certain academic tediousness. For Lampman had the questioning aspiration of the modern undulant mind of the Matthew Arnold type. Greek blitheness, Hellenic gaiety, Athenian irresponsibility and subtlety never evince themselves in his work any more than a sense of humour. "Keats was the only poet whose method," says Mr. D. C. Scott, "he carefully studied." That may be so but he was not of the company of Keats. If I had to describe him in this odious comparative method I should hail him as a child of Wordsworth school. True he loves colour and perfumed words, where Wordsworth used simple, mundane speech; but that was because literary tinsel attracted him. His feeling for nature, for high thinking and simple living was Wordsworthian. The Sufistic paradise in which Keats moved were unknown to this singer of simplicities. He was not obsessed by the passionate thrills, the spinal sensualities of Keats. He had little akin to the spirit that sighed out sonnets, that longed to die a death of luxury. He had no universality of sensuousness. Lampman's only sensuousness was in words, not in ideas or feelings. He might wallow in "Spenserian vowels that elope with ease," but born in respectable Ontario he could not swoon drunken from pleasure's nipple. Nature and books—these alone made up his life. In Ottawa he had small chance for other intellectual life or acquaintance with the arts. Far from artistic movements, the theatres, ballets, cafés, studios, the charm of salons, where women are not only decorative but intellectual centres; many miles away from the world's capitals where fashion and taste are made—the only wonder is, perhaps, that the poet achieved so much. Strange women, strange thoughts like strange drinks were not his earthly portion.

As Masson says, Keats' odes are literally lyrics of sensuous embodiments of the feelings of ennui, fatigue, physical languor and the like, tissue in circumstances and sensation that Lampman never experienced. The intellectual power of Keats is of another order and that order is the hectic. If we wish to find a real reincarnation of Keats we must go to Ernest Dowson or better still to Albert Samain. Lampman confronted with real Keatsian ideas would have felt like a Sunday school in the Moulin Rouge in its maddest nights of old.

Again as to Lampman's hellenic proclivities I can find no more evidence than that you can find in favour of any man who once schoolboywise made out Euripidean choruses and since then has had the disadvantage of being, as Jeffreys said, on occasion mythological. Certainly he is not Greek in his treatment of nature. For as Arthur Stringer aptly said, "he sees nature in a simple light." The Greeks clothed the forces of nature with beautiful forms. Nor again has he the Greek sense of form, which often fairly oozes out of Keats' brain. If you want the Greek spirit in modern literature you must go to the "Mimes" of Marcel Schwob, to "Les Chansons de Bilitis" of Pierre Louys.

Eight years after the appearance of its predecessors "Lyrics of Earth" appeared at Boston. This volume contains, perhaps, nothing so good as the best of the first book. In fact it is rather a repetition of his former note than something new. And the note now is less liquid, less free. It has not gained in depth or range of rapture. Long poems on the months follow each other. We are treated to long descriptions, but the etching is less firm and the stroke often falters. We are told again to take comfort in the fields and feast on summer sounds. Drink of nature's restful cup and ye shall be filled and ye shall understand. An excellent philosophy, no doubt, but hardly universally satisfying. It has its limitations that soon become as apparent as the limitations of the poet's muse. Neither is it a philosophy of energy or aggression. It is rather impregnated with the humiliation of inertia, of a dreamer wandering in fields that are deaf and dumb to his alien sorrows.

Here again in this second slim volume Lampman is happiest when painting the countryside around Ottawa. "At the Ferry," for example, is a wonderfully accurate impression of

the Ottawa river. But pictures, however photographically realistic of nature, are not enough to fascinate. Of course, those humans who are, indeed, favourites of Pan, may spend all their lives in rapt contemplation of the manifold manifestations of nature's wonders; but, page after page of unrelieved description of the "Bird and the Hour," of "After Rain," of "Cloudbreak" is not fulfilling the rich promise offered in "Among the Millet." In fact a feeling begins to pervade the reader's consciousness that Lampman, after all, said all he had to say amply and sufficiently in his first volume. On that his reputation with one or two exceptions will rest. He had delivered what the Muses had told him and he was now but feebly improvising on the same themes with the best half of his inspiration dissipated. That high attitude of mind, burning with a hard gem-like flame, Pater speaks of somewhere, and which sees all the magic pageantry of every minute from the cloud-flake to the flower cannot be continually maintained. Indeed, Lampman has lost some of it himself in vain reiteration and we are filled with doubts as his inspiration visibly fails.

At the time of his death in 1899, a third volume "Alcyone" was in the press. It is far more bookish than its predecessors. The lover of the fields has gone more now to his study for inspiration than in his youth. The only really happy land, after all, is the land of dreams. The comfort of the meadows of dreams has grown more potent than the fields of the natural world. His Cockaigne now is no longer the nearest copse but the land of Pallas, where a man can take this sorry scheme of things we call the world and shatter it and rebuild it after his desire.

His nature poems have become more than ever exercises in description. They have become also wearisome. We first sigh, then yawn, in reading them. The volume falls from our hands and we are asleep. His vein of ideas has run out. He is simply reworking the same old vein and the gold is far to seek and hard to find. He has, in fact, expressed all he had to say. Death has robbed us of nothing in his early demise.¹ His best songs were his first. What cold pieces of rhetoric, for example, are "Chione" and "Vivia Perpetua." "The City of

¹"A Glance at Lampman," by A. Y. Stringer, *Can. Mag.*, April, 1894.

the End of Things" is Lampman's "lost in a tangle of description."² The earnestness of the poet cannot now make up for his limited ideas and limited vocabulary. The persuasive freshness of the first volume is gone. As I leaf this volume I am reminded of fruit that once dew-kissed, juicy and roseate glistened amid green foliage, but has now grown dull and tasteless through prolonged exposure in a greengrocer's window.

In 1900 a collected edition of his works was edited by friends and Mr. Scott, who as a civil servant had known his colleague for the greater part of his life, wrote an introduction to the volume. This is the most valuable addition to our knowledge, for otherwise the edition gives us no new verse of any value and is indeed overbulky with verse too jealously preserved. His friend's sympathetic study, however, must be hailed as lucid and as healthy a note on a comrade as has ever prefaced a departed Canadian poet's work. It is admirable and contains none of the senseless gush that the advertising spirit of the new world has grafted into its literary notices. It narrates simply the incidents of the poet's life and personality. Criticism, laudation and condonation are alike banished from its excellent periods and as we read an image of this delicate young poet rises before us. "His poems were principally composed as he walked to and from his ordinary employment in the city, or upon excursions into the country, or as he paced about his writing room. . . . To write verses was the one great delight of his life. Everything in his world had reference to poetry. He was restless with a sense of burden when he was not composing, and deep with content when some stanza was taking form gradually in his mind."

There are two ways of being a poet, says a dreamer in Jean Richepin's "Madame André" — as a fakir or a Roman Emperor. If you are Nero, Heliogabalus, you live poetry. You have your epopees of power, your odes of voluptuousness. You are lyrism in flower. If not, you must dream of what you have not. And Lampman was essentially a dreamer of dreams. Had he been a more feverish dreamer he might have written greater poems. He would have handled the hair of comets and

²"Canadian Poetry," by Gordon Waldron, *Can. Mag.*, December, 1896.

Venus would have called him by the names of birds. As a matter of fact, however, his were mild dreams, meditative, attuned to a love of placid days and ways. The atmosphere of a government office is not exciting oxygen for a poet. If, however, it had been a bureau in Paris instead of a small village capital, he might have written—well, it is useless to say what. As it is he has given us a handful of perfect sonnets and one or two poems, which should be bound together in a new volume to stand for Lampman in Canadian literature, while the bulk of his collected volume can easily be dispensed with. Lampman himself staked his reputation on his "Sonnets" and in this he was right. The peculiarly limited field of this form of verse was best suited for his mental strength. A solitary thought could be adorned in all its becoming glory. The slow movement of the surgent and resurgent wave of the sonnet kept admirable pace with the gait of his brain. For he had no wide perceptions or experience in the splendid wayfaring of life. His existence had always been sedentary and sheltered, the busy marts of big cities, the dramatic possibilities of great passions, the melodies that men play on women's bodies had passed him by. Poetry like a narcotic had drugged him and left him on an enchanted isle away from the world of action—a spellbound minstrel of song—the Canadian poets' poet.

BERNARD MUDDIMAN.

CANADIAN OCEAN STEAMSHIPS, AND THEIR EARLY DIFFICULTIES.

CANADA entered upon the second half of the nineteenth century with high hopes. To many it seemed that, adopting a present-day phrase, this period would belong to Canada. For many years Canadians had been looking to realize on their geographical advantages, and the time seemed ripe for the gathering. The completion of the St. Lawrence canals in 1849 had provided an uninterrupted passage for vessels from the head of the Great Lakes to Montreal, and the tide of immigration which was filling up the Canadian and American West promised a great carrying trade over this route. At that day there were only 66 miles of railway in the whole of what is now the Dominion, but it had been observed that the railways which were being built in the adjoining states were unable to compete with the Erie canal for the conveyance of the bulky commodities. Hence, since the only effective competitor of the St. Lawrence system was the Erie canal, it seemed reasonable that the former, with its magnificent lake stretches and comparatively short runs by canals would easily capture the trade between the East and the West from a system of transportation, three hundred and fifty miles, or two-thirds, of which consisted of canals. It seemed certain that the great and rapidly increasing movement of traffic between the Provinces and States on the Great Lakes and the States on the Atlantic would be attracted to the Canadian route, and that Montreal and Quebec would become the great entrepôts between the interior of North America and Europe. But the expected did not happen. Not only did the Erie canal hold the business between the Eastern and Western States, but it began to carry the war into Africa, and by 1854 it was bearing a greater quantity of Canadian breadstuffs eastward than the St. Lawrence. The immediate cause of this was plain enough. Though all the advantages of time and cost of conveyance lay with the St. Lawrence route, these were more than offset by the freight charges to Liverpool, the rates from Montreal being double those from New York.

It was on this point, therefore, that enquiry was focused. One investigator observed one set of facts, indicating causes

and suggesting remedies; another investigator was drawn to another set of facts. But there was one great outstanding fact for every person to see, and that was that the Cunard vessels which had practically abandoned Halifax for Boston and New York, received subsidies from the British Government amounting to \$850,000 a year. This handicap put Montreal quite out of the running as a competitor with New York for ocean freights.

In 1851 Mr. Merritt brought the subject up in the Legislative Assembly, reciting the facts, attributing the lower rates to New York in a large measure to the assistance given by the British Government to the Cunards, and by the United States Government to the Collins Line, and moving that the British Government be requested to equalize conditions by assistance to a line between English and Canadian ports. For some reason the resolution was not carried to a vote, but in the following year the Canadian Government took the matter in hand, and made a contract with a Liverpool firm for fortnightly trips from Liverpool to Quebec and Montreal during the months of each year when the St. Lawrence was open, and for monthly trips to Portland during the winter months. The payment was to be £19,000, of which the city of Portland and the companies running the railways from Montreal to Portland were to pay £5,000. The contractors entered on their service, and made a number of trips, but as they disregarded essential features of the contract, the agreement with them was cancelled, and a contract on the same terms was made in 1855 with Mr. Hugh Allan, and the foundation of the Allan Line was thus laid.

The Canadian Government had many difficulties to contend with before its arrangement with the Allans was fairly established. The first of these was the opposition of the British Government. To understand its attitude, a moment's glance backward is necessary. When the British Government contracted with the Cunards for the first regular steamship line on the North Atlantic, it had a large Imperial scheme in mind. Its purpose was to make Halifax the great distributing point for its communications with North America. The main service between Liverpool and Halifax was to be completed by auxiliary steam services from Halifax to Newfoundland, Bermuda and Canada, and the steamers on the Transatlantic route were to finish up their trips by running on to Boston and New

York. This arrangement worked satisfactorily for a few years, though the Cunards were from the first strongly attracted by the advantages of New York as the principal port of call. The tendency to increase the importance of the port of New York at the expense of Halifax manifested itself continuously. In 1845, the mails for Canada were no longer landed at Halifax but at Boston, where they had the advantage of railway conveyance to the Canadian border. In 1852, a contract was made for steam service between Liverpool and New York, with a subsidiary conveyance by inferior vessels to Halifax and Boston. But although the arrangement between the British Government and the Cunards provided virtually for a service between England and the United States, the Government refused to admit that it had in essentials changed character. It insisted, in spite of the obvious facts, that it was still a colonial service, and demanded its recognition in that character by the Canadian government.

In the early part of 1856, the Colonial Secretary advised the Governor-General of Canada that the Home Government made arrangements for a regular mail service to Australia, on the basis of each country paying half the cost of maintenance, and intimated that it would be satisfactory if Canada would contribute to the expense of keeping up the Cunard service. The Postmaster-General, on whom fell the duty of making reply for the Canadian Government, pointed out that as the British Government had a special interest in the success of the Cunard Line, so the Canadian Government had a similar interest in its Line, which it was subsidizing to the extent of its moderate means. No comity of action between the two governments would seem advisable which did not embrace the Canadian as well as the Cunard Line. This reply excited much feeling in the British Government, and they were disposed to bring pressure on the Canadians to compel them to share the burden of the Cunard Line. Fortunately, however, there stood between the principals two gentlemen of humour and good sense who acted as buffers for the rising resentment. Mr. Labouchere, the Colonial Secretary, to whom the Treasury addressed its observations, declined to be the transmitter of pressure on the Colonial government. As Canada had been in no sense a party to the Cunard contract, it would be impossible for the Postmaster-General to press his demand with any

chance of success. Sir Edmund Head, to whom Mr. Labouchere had written confidentially, set forth Canada's case with much clearness. Canadians, he says, ask why they should be obliged to pay a subsidy at all for a line of steamers running into the St. Lawrence from a British port by a route which they hold to be the most advantageous. The merits of the route itself might make any bounty unnecessary, were it not that Her Majesty's Government give a large bounty to a line running into a foreign port. The Canadians think they can arrange for the conveyance of their own mails by way of Quebec in summer and Portland in winter more rapidly and advantageously than by Boston and New York. Why should Her Majesty's government discourage this new enterprise on the part of Her Majesty's subjects, and by a large subsidy drive the business to United States ports? Canadians ask for no sudden termination of the Cunard contract, but they do ask that before this contract is renewed they may have a chance to be heard on the question. They hope that no course will be pursued adverse to the principles of free trade by the continuance of the subsidy to the Boston and New York lines.

Sir Edmund disclaimed the idea of giving these arguments as his own, but they prevailed at the time. The British government agreed to leave matters as they were until the Cunard contract expired, which would not be for five or six years. But this promise was not kept. For reasons which a committee of the British House of Commons found entirely unsatisfactory, the government in 1857 renewed the contract with the Cunard company.

But in spite of difficulties the Canadian line was making steady progress. In 1859 a long step forward was taken. Voyages were to be made once a week each way throughout the year. The completion of two great enterprises put the service on a totally different footing, and enabled the Canadian transportation system to carry its activities into the heart of the continent. The Grand Trunk Railway company built its line down the south shore of the St. Lawrence to Riviere du Loup, and the Victoria Bridge was opened. These two links completed an uninterrupted line of railroad from Riviere du Loup, one hundred and twenty miles below Quebec, to Chicago and New Orleans. There was also a clear course from Portland to the same cities in the interior by the Grand Trunk

railroad. The Postmaster-General of Canada at once drew the attention of the governments of the United States and of the leading countries in Europe to the advantages this line offered for interchange between Europe and the inland ports of North America. The British government was induced to place a special train on the line from Dublin to Cork, the last port of arrival and departure for the Canadian steamers, and there was thus a through service by railroad and steamer from the Thames to the Mississippi. The United States having lost the Collins' Line was anxious to replace it as far as possible by the Canadian steamers, and the governments of France, Prussia and Belgium hastened to take advantage of this new means of intercourse with the interior of the North American continent. If there was any slowness on the part of the British government to welcome a rival to the heavily subsidized Cunard Line, there was none on the part of the British people. The Canadian steamers took their place in the scheme of sailings from British ports along with the Cunards.

The difficulties due to the engagements of the Home Government with the Cunard company, and the eventual victory of the Canadian Government, have been set forth. But the Canadian Line had much more serious ones ahead. Her fleet suffered a series of disasters probably without parallel in the history of any other line, certainly of any other line operating at that period. The first loss took place in what may be called the experimental period. On the 1st of June, 1857, just a year after the service was inaugurated, the "Canadian" was running up the St. Lawrence. The night was fine, the tide at the full, and conditions apparently could not be more favourable; the vessel was within a very few hours of its destination at Quebec, when suddenly she ran ashore on the Roches dragon, opposite Bay St. Pauls. The fault was the pilot's, who either mistook his course or attempted to save a little time by running up a dangerous channel. Efforts to get the steamer off the rock were fruitless, and she was abandoned as a total wreck. This was something of a facer for an eager and expectant public, but it was some comfort that it was the pilot and not the route that was to blame. But it was not until the experimental stage was past, and the line was challenging the attention of the world, that disasters began to multiply. During the five years following the commencement of the weekly service

in 1859, the Canadian Line lost more first-class vessels than all the other companies engaged in transatlantic conveyance. Between 1859 and 1864 there were eleven steam vessels wrecked in the Atlantic. Of this total seven belonged to the Canadian Line, and as if to remove any doubt as to where the trouble lay, the accidents all took place on this side of the ocean.

It will be remembered that each year when navigation closed on the St. Lawrence, the steamers ran to Portland, Maine, the ocean terminus of the Grand Trunk railway. The course ordinarily followed by vessels from the United Kingdom to Portland was straight across to Cape Race in Newfoundland, thence to the waters between Sable Island and Nova Scotia, the coast of which the steamers skirted for its whole length. After leaving Cape Sable, the southernmost point of Nova Scotia, they had a deep water passage for the rest of the voyage. The Nova Scotia coast was a source of much anxiety to navigators. The "Columbia," the only vessel owned by the Cunards which was lost up to this time, was wrecked on this course, as were also the "Humboldt" of the American Line and the "City of Manchester." During the winter of 1859-60, within three months of one another, two of the fastest steamers of the Canadian Line went to pieces on this shore, with great loss of life. The "Indian" on the 21st of November, 1859, ran ashore on the Deal Ledges, off the fishing hamlet of Marie Joseph, and went down within half an hour, taking with her sixty of the passengers and crew. On the 20th of February following, the "Hungarian," a new and very fast vessel, ran on the rocks two miles off Cape Sable, and not a soul was saved.

These disasters caused great public distress, and a Legislative Committee was appointed to enquire into the circumstances of these, as well as of the loss of the "Canadian" in 1857. Some of the points to which enquiry was directed, and the evidence elicited, are curiously interesting as illustrating the problems besetting the infancy of ocean steamship construction. After noting the great scarcity of lights on the St. Lawrence, and the necessity of extreme caution in the passage down the Nova Scotia coast, the enquiry turned on the relative merits of wooden and iron ships. The Canadian vessels were all of iron, while of the Cunards ten were of wood, and only

two of iron. Several witnesses were examined on this point, and there was a general concurrence in the superiority of wooden vessels. Two reasons were offered for this opinion. Iron vessels when they struck were said to shiver readily to pieces, whereas the chances of saving life on wooden vessels in the same case were much better. But a more important consideration was the effect of the iron of the vessels on the working of the compasses. In iron vessels, the compasses were a source of continual anxiety, while in wooden vessels they worked well. It was said to be a difficult and tedious process to regulate the compasses in iron ships. Before the vessel proceeded to sea the local attraction was neutralized by magnets, and thus adjusted would work with tolerable accuracy while the ship was well out at sea, and beyond the influence of land attraction. But when approaching or running along a shore, they were not to be depended upon. The compasses were disturbed by attraction from the land, but whether that attraction acted directly on the needle, or whether the mass of iron in the vessel was first acted upon by the land attraction were points which the existing state of scientific knowledge did not enable them to decide with certainty. It was shown that the "Persia," one of the iron vessels of the Cunard line, had had trouble with her compasses between Cape Race and Cape Sable in May, 1858, and that the Cunards confined the voyages of their two iron vessels to the New York route, which was a deep water passage all the way. The committee feared that until there was an advance in the science of navigation on this important side it might be necessary to return to wooden ships.

The remainder of the season passed without mishap, but with the opening of navigation on the St. Lawrence in 1861, the line's ill-luck reappeared and before the close of the season the list of disasters was augmented by two further losses. In June, the "Canadian," the second of the name, was struck by a sunken ice floe just outside the straits of Belle Isle. A hole was torn in her side below the water line and she sank within two hours. Twenty-nine lives were lost, chiefly by the capsizing of one of the boats. The Board of Trade had no comment to make except that the fourth of June seemed too early for the Straits route. In November the "North Briton," on her way down the river, lost her course in the channel between Mingan Islands

and Anticosti, and running on a reef became a total wreck. The year 1862 was a red letter one at that period of the line's history. Not a vessel was lost during the whole twelve months. But Fate was merely delaying its cruelest blow. Between 27th April, 1863, and February, 1864, three of the finest vessels of the line demonstrated, each in its own way, the unpreparedness of the company at that time for successful competition with the Cunards for supremacy on the Atlantic.

The first of the doomed trio was the "Anglo Saxon." This vessel left Liverpool on the 16th of April, 1863, and until the 25th made her passage westward uneventfully. On the evening of that day the vessel met ice, and her speed was slackened. Next day was clear and bright and at noon the captain made observations and ascertained the ship's position. The day (it was Sunday) continued fine and the vessel was all day under full steam and sail. Next morning it was foggy, and the Honourable John Young, who was on board with his wife and seven children, asked the captain if it was his intention to make Cape Race, as he had been instructed to. The captain answered that it was not, and that by noon they would be twenty miles south of the Cape. About eleven o'clock Mr. Young was in his state-room when one of his children called him to see a great iceberg quite close to them. He ran towards the deck but before he could reach it, the ship struck and he found himself facing a precipitous mass of rock so lofty that in the fog he could not see the top. Though the vessel was so close to the shore that passengers saved themselves by climbing along the bowsprit and dropping on the land, two hundred and thirty-eight of the passengers and crew, including the captain, were drowned. This calamity gave point to the observations made before the committee of enquiry as to the faulty action of the compasses under the influence of the coast. The captain was one of the most careful of the line, he had ascertained his position but a short time before, and yet he was egregiously astray in his calculations. It is true that he was in a vicinity where the conflict of powerful currents make the reckonings of experienced captains often of no more value than the speculations of amateurs. The Newfoundland government in 1901 published a wreck chart, from which it appeared that no fewer than seventy-seven vessels, great and small, had been wrecked either on the Cape or within a few miles to the north or west. On the

14th June, not quite two months later, the "Norwegian," which was built two years before, ran ashore on St. Paul's Island, north of Cape Breton, in a dense fog. Happily, although the vessel was a total wreck, the passengers and mails were all landed in safety. The last of the tragic series was the "Bohemian," which struck on Alden's Rock near Portland and sank one and a half hours later. Of the three hundred and seventeen passengers and crew, forty-three were lost by the overturning of one of the life-boats.

The public indignation against the vessel owners found voice in the Legislature, where there was a sharp demand for the withdrawal of the government from all connection with so ill-starred an enterprise. The Postmaster-General, however, pleaded that such action would be a fatal blow to the St. Lawrence route, in which, in spite of disasters, his faith was undiminished. His advocacy prevailed for the moment, but in 1863 a change of government took place, which had serious consequences for the Canadian Steamship Line. On a recommendation from Mr. Oliver Mowat, the new Postmaster-General, it was resolved in view of the failure of Mr. Allan to carry out the terms of his contract, and of the large discrepancy between the postal receipts from the service and the amount of the subsidy, that the contract should be cancelled and a new contract made for a greatly reduced subsidy.

In awarding the contract, the government had no choice. There was no one in a position to compete with Mr. Allan, and the government could not but recognize the fact that, until the loss of his vessels, Mr. Allan had performed the service in a manner to win general commendation. They also observed that several other steamship lines—the Collins, Havre and the Galway lines—had come to total failure during the years in which Mr. Allan was struggling on in face of persistent ill-fortune, and they concluded that with his great experience, and the additional provisions for safety introduced into the new contract, there was as fair a prospect of a safe and efficient service for the future as could be expected under any arrangement the government might sanction. The subsidy was reduced from £104,000 to £54,500.

The confidence of the United States government was in no way impaired, as for a number of years the returns from correspondence between that country and Europe showed no sign

of diminution. But the Canadian Line lost ground as faster steamers were added to the lines running to New York, with which the Canadian Line could not compete. The relative superiority of the port of New York as the entrepôt for the States in the west was enhanced by a very expeditious railway service.

The culmination of disasters in 1863 and 1864 was followed by a sharp change. During the twenty-five years which ensued there was but one boat lost. Whether, as the government and many people had come to think, the responsibility for all these losses was to be laid to the lack of reasonable precautions on the part of the company, or whether they were not, at least in large part, attributable to causes over which the company had no control, there is no means of knowing. The outstanding feature in the whole business was the dogged resolution of Mr. Hugh Allan to justify his faith in the practicability of the Canadian route, and in his ultimate success he rendered an incalculable service to Canada.

W. SMITH.

Ottawa.

MECHANICAL MEASUREMENT OF TIME.

THE PORTABLE ESCAPEMENTS.

Although the escapements found in watches and portable clocks have many things in common with those of fixed clocks, as one might well believe, yet there are material differences in their modes of action arising from the difference between the motion of the balance and that of the pendulum.

Thus the pendulum should swing through the small arc of about 2 degrees on each side of the neutral position, and a much greater arc than this would bring the circular error into too great prominence.

But the balance has no such definite limits to the extent of its oscillation, as it is not affected by anything corresponding to circular error, and under favorable circumstances its oscillation may extend over an arc of any magnitude from 90 degrees to 180 degrees on each side of the neutral position.

It is clear then or should be clear to any person who gives the matter careful consideration, that the clock escapement needs to be considerably modified in order to adapt it to watches, or portable time-pieces in general.

The old-time clock of DeWyck and his contemporaries, as long as the regulating weights were hung upon the beam of the balance, required the axis of the balance to be vertical, so that the beam might oscillate in a horizontal plane. If it were to be used after the manner of a modern clock, the axis of the balance would need to be horizontal, and but one half of the beam of the balance be retained to act as a pendulum. This half would then oscillate, but on account of the shortness of the pallets, through a large arc which could not conveniently be cut down to the standard of 2 degrees upon each side of the vertical.

It is probable that the original DeWyck clock did not keep much better time than a well constructed clepsydra, and if it had been used as a pendulum clock, after the manner pointed out, on account of the large circular error, it would not have done much, if any, better.

But however interesting this old escapement may be from a historical point of view, it has passed completely out of modern use for horological purposes, and is to be met with

only as an old-time curiosity. Even the English bull's-eye watch is no longer manufactured, although I suppose it might be possible to purchase a second-hand one if a person has a curiosity in this direction.

Watch escapements have developed much along the same lines as those of the clock, but owing to the large arc through which the balance must necessarily oscillate the form of the escapement sometimes becomes so metamorphosed that it is difficult to trace its affinity.

1. *The Cylinder escapement.*

This is the analogue of Graham's dead-beat in clocks, and is in fact a modification of the latter adapted to the balance as a governor.

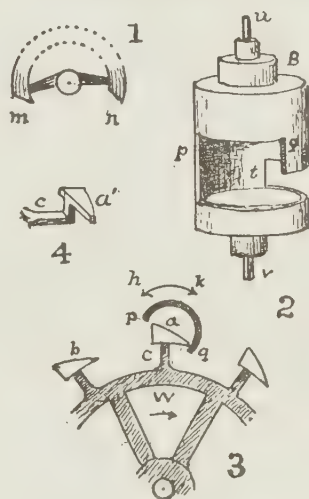
In 1, m and n are the pallets turning about the centre o . If the scape wheel rotates in the direction of the arrow, the dead faces on the pallets would be the outside cylindric surface at m and the inside one at n ; and as these are to be of considerable extent, 120 degrees or something like that, we may profitably continue the two surfaces so as to form part of a closed cylinder, as in the figure, if other things can be conveniently adapted to this modification.

In 2, we have a perspective view of the cylinder, where p and q take the places of m and n in 1, and where a section of about 150 degrees is cut away from p to q , and about 240 degrees from p around to t .

The balance fits on at B and the cylinder turns on the pivots u and v .

In 3 is illustrated the mode of action. The impulse faces are on the teeth of the scape wheel, W , and 4 shows the elevation of the acting part, a' , of the tooth above the plane of the wheel.

The point of tooth a rests against the inner surface of the cylinder. If the cylinder rotates in the direction denoted by K , the tooth a remains at rest and slides on this inner surface. As this motion takes place under the swing of the heavy balance the edge q will approach c , and to prevent q from coming



in contact with c , the cylinder is cut away as shown at t in 2. When the cylinder rotates in direction h the acting face of a gives an impulse on the edge q , and as it escapes from q tooth b falls upon the outer surface of the cylinder very near p . As the momentum of the balance carries the cylinder further in the direction denoted by h , the tooth b rides upon this dead surface. In the after rotation in direction k the tooth b gives an impulse as it passes p and comes into the position previously occupied by tooth a .

We have here, as in Graham's dead beat, an impulse given at each swing of the balance, and after each impulse a period of rest while the point of a tooth is sliding on either the outside or the inside surface of the cylinder.

Owing to the large arc through which the balance swings the dead action and therefore the friction are relatively much greater than in the corresponding clock escapement. This form of escapement has been very popular and very much used in watches, especially in those manufactured in Switzerland and some other European places, and when carefully made these watches have given good satisfaction, and they are comparatively cheap.

The cylinder escapement goes also under the name of the *horizontal* escapement—a name which has no distinctive meaning, inasmuch as most escapements, if not all, may be said to be horizontal.

2. *The Duplex escapement.*

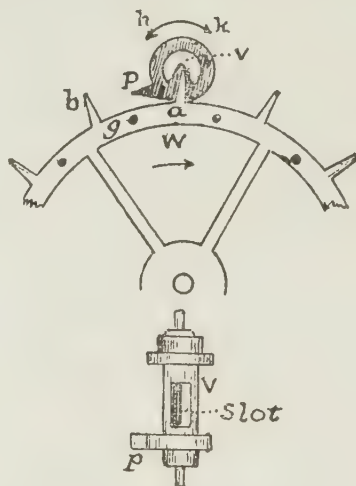
This escapement which has a single impulse—that is, an impulse in one direction only—and continuous contact between scape wheel and balance, has no analogue in those applied to clocks, although a modification of it might be so applied and probably with very good effects.

In the figured representation v represents the balance shaft or axis, in one side of which is a deep slot or groove, as shown in section in the upper figure and in perspective in the lower.

The pallet, attached to a collar, is shown at p and this collar is placed on the shaft just below the slot. The scape wheel, w , which moves in the direction of the arrow, has a set of teeth, a , b , and c , and also a set of pins projecting downwards and represented at g .

As the balance swings in the direction denoted by *h* the tooth *a* escapes from the slot, and the pallet *p* comes into position where it is caught by the pin *g*, and given an impulse. As *p* escapes from *g*, the tooth *b* falls on the balance arbor and rides there, as the only way in which the tooth can pass the arbor is by way of the slot.

As the balance swings back in the direction *k* the tooth *b* passes over the slot, as in this case it can only partially enter it; but as the balance returns in direction *h*, the tooth falls into the slot and matters return to the state represented in the diagram, tooth *b* being now in the place of *a*; and in this manner the balance is kept swinging.



The inventor of this escapement is not known, but whoever he was he succeeded in producing a really good escapement, although one in which accurate work and careful adjustments are necessities. As the balance staff is comparatively small where the tooth of the scape wheel rides on it, the friction is also small in amount, and as the impulse is given across the line of centres, the friction connected with the impulse is reduced to a minimum.

The only objection to this escapement for pocket watches is that, as the impulse is given in only one direction, there is some danger of the action being stopped by a sudden or quick change in the position of the watch. For this reason, and probably more for the reason that other escapements can be produced more cheaply, the duplex is going out of use, or is being replaced by escapements requiring less delicacy of construction, and especially by the lever.

3. *The Lever escapement.*

This escapement, which is said to have been invented by Berthoud of France about 1760, is a sort of a cross between Graham's dead beat and the detached escapements in clock work. The escapement, as far as it concerns the scape wheel, is a dead beat, but in relation to the balance it is a detached escapement, the balance being free to make a considerable part of its swing without any contact with other parts.

In use, the lever escapement is the most common of all, being found in the highest priced movements of the Elgin and Waltham factories, and also in the Waterbury watches which sell retail, case and all, at one dollar apiece.

As the impulse is given at both swings of the balance, the probability of the watch stopping under the effect of a quick movement is very small indeed.

The impulse given by the teeth on the pallets, where most of the friction occurs, is not across the line of centres, but on the other hand the balance is but little affected by that friction, as it is free from the escapement at all times except when the impulse is being given. And as the balance is not subject to circular error, the extent of its swing is immaterial, provided it exceeds a certain minimum.

In the most of English-made lever watches the teeth of the scape wheel are pointed, as shown in the illustration. But in those made in America, and in Switzerland under American control, the teeth usually have the form shown herewith, where a part of the impulse face is given to the tooth and a part to the pallet.

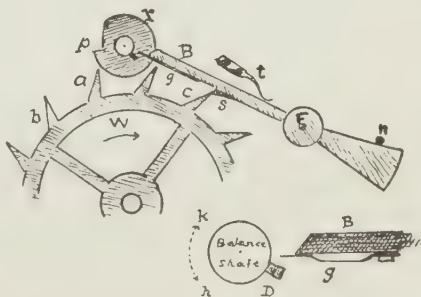


The only advantage in this form is that the teeth are heavier at their acting part and therefore wear away more slowly than in the pointed form. But such an advantage is hypothetical rather than real, as the scape wheel is likely to last as long as the other parts of the watch or clock.

4. *The Chronometer escapement.*

For the very best results in a watch escapement, that is, in one where the governor is a balance and hair spring, it appeared to be necessary that the balance should have as little contact as possible with the other parts of the machine, and that it should be left, as far as practicable, to have perfect freedom in its swing. These conditions are fairly well fulfilled in the chronometer escapement.

In the accompanying illustration, *w* represents the scape wheel, turning in the direction denoted by the arrow. *B* is a bar turning on centre *F*, and held against the pin *n* by a light spring as shown. This bar is perfectly balanced about its centre



F. On the lower side of this bar is the stop *s*, against which the tooth *c* rests. The roller *r*, on the balance shaft, is cut away to form a pallet as shown at *p*. At the end of the bar *B* is a very delicate spring, denoted by *g* and shown on a larger scale in the lower part of the illustration, and in the balance shaft is a pin *D* which acts on this spring. The action of the whole is as follows:—

When the balance swings in the direction denoted by *h*, the pin *D* meets the spring *g* and pushes it, and the bar along with it, outwards until *D* escapes from it and allows the bar to fall back under the pressure of the spring *t*. This movement releases the tooth *c* from the stop *s* and frees the wheel.

The tooth *a* then falls on the pallet *p* and gives an impulse to the balance, and when *a* escapes from *p*, the next tooth falls upon *s* and the wheel is held at rest.

In the reverse swing, in direction denoted by *k*, the small pin *D* pushes the spring *g* backwards and passes it, performing no other work, and leaving matters as they were at the beginning, except that the balance wheel has given one impulse and moved onwards through the space of one tooth.

In this escapement the impulse is given across the line of centres, and the only two sources of friction are the unlocking of the tooth *c* from the stop, and the passing of the spring *g* in the return motion. The first of these, although very small, cannot be wholly eliminated, as the spring *t* must have sufficient force to bring the beam *B* promptly into its position of rest. As for the second, it may be made as small as we please by making the spring *g* sufficiently delicate.

This escapement in a pocket watch labours under the same difficulty as the *duplex*, that is, on account of the impulse being given only one way, the watch is liable to stop when subjected to quick and violent motions, such as occur in playing some of the popular games. But it is undoubtedly the best of all the watch escapements when kept fairly quiet and in one position. For this reason it is the escapement always employed in what are called ship chronometers, and hence the name that is given to it.

Several other escapements have been invented from time to time, but they have never come into common use, and at present it appears that the lever is destined to replace all the other escapements for pocket watches.

For the purposes of navigation, where the time-piece is kept in a horizontal position, the chronometer escapement seems to satisfy every requirement, and it is no doubt theoretically the best one ever invented.

The maintaining power. This is not a part of the escapement or of the governor, but it is a necessity in the most of clocks driven by a weight, and in some driven by a spring, if accurate time-keeping is required of them. Its purpose is to keep the moving power on the clock while it is being wound, so as to prevent loss of time while winding.

In the majority of modern watches the action of the spring is so arranged as to avoid the necessity of a maintaining power, but in all of these the force transmitted to the escapement is not uniform, being greatest when the spring is wound up and becoming gradually less as it runs down. This source of irregularity is found mostly in Swiss and American watches; while in the English watch, with its barrel and fusee, the force is fairly uniform during the whole action of the spring.

It is quite true that the American form of watch is driving the English one out of the market. This is not, however, because the American make of watch is better, but rather because it is simpler and easier to make and therefore cheaper, besides having usually a more attractive appearance.

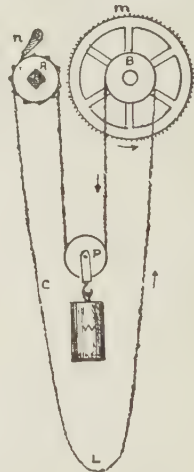
Moreover, the American watch is supplied with a good escapement and a compensated balance, and keeps very satisfactory time during the 24 hours between consecutive windings, and in this short time any variations arising from irregularities in the driving force, so correct one another as to leave no noticeable outstanding effect. But, where accurate time-keeping is a necessity, as in marine chronometers, the better but more expensive English arrangement is still employed.

In any good and reliable clock driven by the falling of a weight, as most clocks are, some form of maintaining power is necessary. For without such, a recoil escapement, while being wound, will lose time by its scape wheel turning backwards, while some of the other escapements would be liable to stop.

It is true that the common American domestic clocks very seldom, if ever, have a maintaining power, although they have a recoil escapement. But these can not be called good and reliable clocks, although they serve their intended purposes very well.



One of the oldest forms of maintaining power was the endless chain and sprockets, figured herewith. *C* is an endless chain going over the sprockets *B* and *R*, and around the pulley *P* to which the driving weight, *W*, is attached. To the sprocket *R* a winding square and ratchet wheel and pawl are attached, as shown. As the weight descends it drives the main wheel, *m*, through the attached sprocket *B*, and by turning *R* by means of a key on the winding square, the weight is raised without interfering in any way with the tension of the chain, outside of a very trifling amount of friction. So that the force acting on the main wheel is practically constant at all times, whether winding is being done or not.

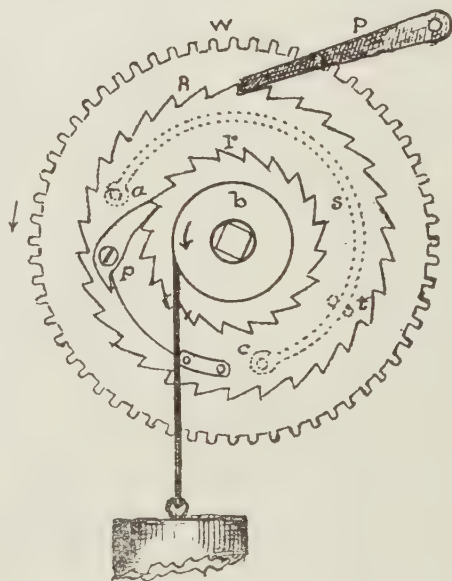


This form of maintaining power, which was common in many old Dutch clocks, has pretty well gone out of use, not because of any inefficiency in its action, but rather on account of its clumsiness and want of general adaptability. Many of these old clocks had a striking attachment, in which case the main wheel of the striking mechanism was fixed to the sprocket *R* and the pawl, *n*, was dispensed with. Both parts of the clock were driven by the same weight which was wound up by the one winding square, on *R*.

Harrison's maintaining power. The inventor of this was also the inventor of the gridiron pendulum. In the illustration, *b* is the barrel carrying the winding square and the ratchet *r*, and driven, by the weight, in the direction denoted by the arrow.

By means of the pawl *p* the ratchet *R* is carried forwards along with the barrel, but is prevented from going backwards by the pawl *P* which is attached to the clock frame.

R drives the main wheel, *W*, by means of the spring *s*, lying



between *R* and *W*, and attached to *R* by a pin at *a* and to *W* by a pin at *c*, as shown in dotted outline.

The weight puts the spring *s* under tension, and as *R* cannot go backwards, this tension is never relaxed, except to a small extent, even during the time of winding.

This is the form of maintaining power used in all good clocks and chronometers and English watches having a barrel and fusee.

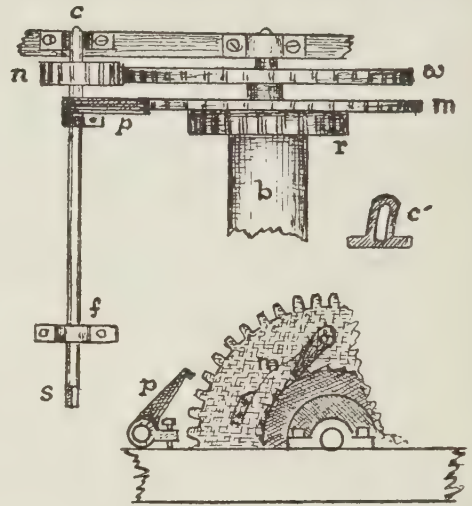
The inventive spirit, like that of the spirit of discovery, is a restless one which never follows the advice to "leave well enough alone," or, rather, should we say, never sees anything in the line of invention that is "well enough" to leave alone. And for this spirit we may be thankful. For usually the first invention fulfils its purpose in a more or less incomplete way, and it is, in many cases, only after repeated improvements that the invention is brought to that state of perfection which we so much admire, and which leaves little, if anything, to be added in the way of efficiency.

Harrison's maintaining power is quite well adapted to those cases in which it is usually employed, but it labours under the disadvantage, if it be a disadvantage, that it is never quite equal to the force of the driving weight while winding is going on, and that it grows gradually less during the process of winding.

In the majority of cases this is not really objectionable, but in the case of church and turret clocks of large size having gravity escapements, and where the operation of winding may occupy several minutes, the fore-mentioned features may allow the escapement to miss several beats, and thus to lose time. A recoil, or a dead-beat escapement, will follow on after the pendulum as long as the force transmitted to the scape wheel is sufficient to overcome friction; while in the case of a gravity escapement the force must, at all times, be sufficient to raise the pallets, and it need not, at any time, be more than this.

The most improved form of maintaining power for tower clocks is figured herewith.

The winding is done through the auxiliary shaft *sc*. The winding wheel *w* is fixed rigidly to the axis of the barrel *b*, and the main wheel *m* rides loose upon this axis, and is driven by a ratchet and pawl, the ratchet *r* being firmly attached to the barrel, and the pawl being attached to the main wheel, as shown below.



The winding shaft has a square, with a front bearing at *f*, and carries the pinion *n* which meshes into *w*. The back bearing, *c*, has an elongated opening, as shown at *c'*.

The pawl, *p*, rides on the winding shaft, as shown in both figures, and is kept from engaging with the teeth of *m* by a small screw, as shown.

To wind the clock the crank is put on at *s* and turned forwards. At the first attempt the pinion *n* endeavors to climb up the wheel, *w*, and thus to raise the *c*-end of the winding shaft. This allows *p* to fall on and engage with a tooth of the main wheel *m*, which from now on receives all the strain of winding, which strain is practically equal to the force imparted to the main wheel by the driving weight, increased by a very slight amount for friction.

As soon as the force on the winding crank is relaxed the end *c* falls back into place, and *p* is lifted clear of the teeth of *m*.

With this contrivance properly installed, the force tending to drive the clock is practically invariable, whether winding is being done or not.

Whether some coming inventor will improve on this is a problem of the future, but it is difficult, at present, to see how one can do so, as the arrangement appears to be perfect in both theory and practice.

It is, of course, intended for, and adapted to, large clocks, in which the winding has to be done by an auxiliary shaft.

N. F. DUPUIS.

THE PLACE OF THE CANADIAN-BORN IN THE EMPIRE.

IN the "Current Events" of *Queen's Quarterly* for July, 1914, Professor Skelton states, commenting on the *Komagata Maru* episode, that the British Empire "is not a unity," and that "absolute autonomy is the only basis of enduring connection." His contention, in brief, is that any attempt to substitute a formal and centralized unity for the flexible union in diversity of the co-operative solution would be unfortunate, and that the sooner the ultimate responsibility of the Dominions for whatever policy they adopt, of course after adequate consultation, is recognized, the less will be the danger of Indian disaffection coming to a head against Great Britain, which at present is held responsible for Australian and Canadian actions which it really does not control.

If Dr. Skelton and I each understood exactly what the other meant by such terms as "unity," "autonomy," "co-operation," "concentration," etc., I do not think that we would find ourselves very far apart on the question of the proper relations between the parts of the Empire, though even when we thoroughly understood one another's terms, I would probably incline to place more emphasis on concentration than Dr. Skelton would think advisable and to attach much more value to the Monarchy than he does.

The only criticism I wish to make of his statements is that they are very apt to be misunderstood by thousands of Canadians who think that they hold the same views as Dr. Skelton. The great majority of Canadian-born have little or no sense of historic continuity. It would be absurd to say this of a man who has imbibed the Classical spirit as deeply as has Dr. Skelton, but sometimes his statements on constitutional questions fail to indicate that he allows for it or gives it anything like an adequate place in his arguments.

The purpose of this article, then, is to make clear how vastly important a thing a sense of historic continuity is in the formation of national character or in forming any judgment on what the relations between the parts of the Empire ought

to be, and how necessary it is for the Canadian-born to cultivate this sense if they are to fulfil the destiny that lies open before them.

A definition of the British Empire might be useful but I shall not attempt it. Sometimes we are told that we must make new definitions of Empire. That does not seem to me terribly important. For one thing it will probably be more practicable to frame a correct definition of the British Empire a thousand years from now. We shall know more definitely then just what it is, or at least what it has been, and how much it differs from all previous Empires. Meantime some of us are satisfied to know that we possess something very real in a united British Empire, something new in the world's history, something greater or destined to be greater than any Empire that has preceded it. If we are told that "Empire" is not a correct word to apply to this unity, if it is said that we are making an unjustifiable use of a word, we reply that we can give a good reason for so doing, that we are not going to give up the expression "British Empire," for it has gathered about it traditions and associations which are of priceless value compared with the pedantic satisfaction which we might feel in using a dictionary word in its exact meaning. By the time we have put the content into the term which our faith tells us we shall put, the dictionaries will define accordingly.

It is to be feared that some enthusiasts on Canadian autonomy have failed utterly to comprehend the convictions and feelings which inspire Imperialists. When those who extol the advantages and sufficiency of co-operation tell us what is meant by Imperialism and explain to us just how much good there is in it, some of us Imperialists feel as lovers of the Bible felt when Matthew Arnold explained just how much and no more there was in the Bible. Matthew Arnold did much to make real and clear things that had been only very vaguely understood and to suggest a point of view which enabled many people to grip and appreciate a Book that was becoming, and in some cases had become, obsolete. But when he undertook practically to say, "This is the whole value of *Isaiah* and the Psalms, there is nothing more," then, though many people who had given scant study to the Bible and had never loved either *Isaiah* or the Psalms, said, "Yes, that is the correct estimate," men and women who had found the breath of life, and God

himself, in the Old Testament, never felt that Arnold had given anything like an adequate interpretation. In the same way "Co-operationists" (I doubt if this word can be found in the dictionaries, but perhaps those whom it describes will put a content into it during the next few centuries that will force the dictionaries to take notice) often make Imperialists suspect that the feelings of passionate oneness with the Old Land for which we are ready to lay down our lives are regarded as the mere sentimental illusions of misguided enthusiasts. There are certain convictions which our friends have not yet comprehended.

I have already used the expression "historic continuity" and I am going to use it several times without variation at the risk of being tedious, for, though the phrase may have a familiar sound, it is not one that conveys much meaning to the average Canadian-born man or woman, for the reason above noted, that Canadians have so little appreciation of what is involved. They lack the sense of it and explaining it is like describing colors to a blind child. We consider it worth while to develop sight in a blind child even at the cost of tremendous effort. Is it worth while to spend effort on developing the sense for historic continuity? Yes, if developing any noble faculty of the soul is worth while. A person who has but a faint glimmering of what is involved need not expect to acquire a very strong sense of historic continuity unless he cultivates it vigorously for many years. By making it strong and clear he will render a service to himself and his country. He will succeed in this, not primarily, or even necessarily, by the study of Economics or of Constitutional History, though the latter, especially, would be helpful, but by strengthening his character and his capacity for reverence.

Let us proceed by illustration rather than by definition. A young man has been brought up in the Church of England, but has never regarded his Church or his religion as anything but a necessary piece of the furniture of life, and a somewhat cumbersome piece at that. At a Salvation Army or Christian Science meeting he gets something that his soul tells him is a reality. His immediate impulse is to sever all connection with the religious forms and habits of his boyhood, he realizes so vividly the tremendous value of the present novelty. As he has never attached much importance to the Church of his fathers,

he is not apt to see things in true perspective. Happy is he if some instinct or even accident prevents him from throwing away forever the priceless things that he and his children might have if he combined the new vision with the old traditions. Even if it is only a blind instinct that saves him, that instinct is evidence that he possesses some sense for historic continuity. Any man who can break all ties with his religious past without a heavy heart shows both that he has no sense for historic continuity and that his soul is small.

Or again, let us suppose that a man and wife came to Canada in the thirties or forties of last century, he from a Highland glen, she from a fishing village on the coast of Scotland. They take up their abode among the pioneers in the backwoods of Ontario. Among their neighbours are many others of Scottish birth, including some of gentle blood and not a few university graduates. But nearly all have lost, or are losing, all touch with the land of their fathers. This wife determines that she will not sink in that way. How will she keep alive the love she bears to the people and places she has left behind and that she has little hope of seeing again? She is wise enough to know that it will not be done by chance. She is poor and overworked and it means a big effort to keep curtains at the window and clean linen on the table, but these things represent to her the refinements of her early life and she clings to them. Tablecloths are washed and ironed when the work is pressing severely, but a reward comes when she finds that as a result of her example other women have taken fresh courage and relieved their heart-hunger by making their homes more suggestive of the ones left behind, for which they yearn. On the walls hang a few pictures which she has been thoughtful enough to bring with her to keep fresh in memory the parish Kirk, the schoolhouse, the fishing boats, the wild sea and the hills over which her husband had hunted the deer. Instinctively she realizes the necessity of writing letters regularly. The postage is a serious item at both ends, also the time that has to be found when physical weariness makes writing a task. But never does a month pass without a letter starting on its long journey and each month brings a welcome budget from appreciative friends at home. Cheaper postal rates are eagerly welcomed for weekly letters are now possible. Remarks are often made to her such as, "I don't find time for trifles like

these," or, "I think it is foolish to write letters when you don't feel like it, it is sure to be a poor letter," or, "You can love your friends at home just as well without writing and surely they won't stop loving just because you are too busy and too tired to write to them." She knows full well that these things, though externals, are not trifles, that while no one of them is essential, the neglect of all would be spiritual suicide or something approaching it, that writing letters when she felt like it and at no other time would soon result in no letters being written at all, that the love which never or only spasmodically expresses itself in external acts is worth little, that the inspiration must in nearly all cases come with the effort and grow out of it. Many a letter, consequently, is written in odd moments when she is almost too driven to collect her thoughts, but such letters count for much in the history of a family and in the history of a country. Thirty years pass away. Children have grown up who are conscious that they possess something higher than the sordid daily routine, or rather something that helps to keep the routine from being sordid and gives it a meaning and a life. Seventy years pass. To the children's children places and people that they have never seen are household words. They now know enough to thank God that their grandmother, dead and gone, had a feeling for historic continuity, even though she never used the term. They have something that makes them strong in the hour when materialism calls calls hard.

Fortunately there have been many cases in Canada such as the above. But in far more cases Canadians have grown up practically without traditions and without sense of historic continuity. That the sense, though latent, is still powerful is evidenced by what took place at the time of the Dominion election of 1911. Thousands of Canadians who did not deny that Reciprocity might bring material advantages, felt a suspicion—whether founded or no is not here the question—that British traditions and British connection were in the balance, and the mere possibility of jeopardizing these things made them vote against Reciprocity. More than that, the whole world looked on and said: "Canada is evidently closer to Great Britain than to the United States." Even men who had voted for Reciprocity were pleased at this comment.

Perhaps we can see more clearly what is involved in historic continuity if we ask what makes the Canadian-born willing to die for the Empire. Here the first thing that must be admitted with shame and confusion is that in very many cases they are not. Of the eight million people in Canada, eleven per cent. were born in the British Islands. This small fraction supplied more than seventy per cent. of our first contingent in the present war. In other words, they saved us from national disgrace. There is no justification for this, for the armies of the Allies are defending our homes, our wives, and our children from the German brutes who murder the helpless, just as truly as if hordes of German invaders were on our frontier. There is no justification, but is there a reason?

It is no reproach to Canadians that their love of Canada is not the same thing, cannot possibly be the same thing, as that of the Englishman, Scotchman, or Irishman, for his native land. It is utterly impossible for any human being to have such a love as a Scot for the spot in which he was born, unless he has hundreds of years of tradition behind him. Generation after generation leaves its mark on the little village. Family names run back into the misty past. On one little spot of ground, often under one roof, successive generations of children's children add their contribution to that which makes the moral atmosphere, good or bad, of the place. The church, the schoolhouse, every place of public meeting, has its wealth of associations, traditions which speak effectively to a man not merely of his home but of the land in which he and his forbears have struggled for those things they hold most dear. In glens, hamlets, villages, or large towns, people are struggling century after century to secure their interests, win their liberties, and make real their ideals. Common action by representatives of all parts of the country is often necessary. Intense feelings of comradeship are developed. The country takes on what might be called a *personality*, a personality which is real to the mind of every son each time he hears either that country's name or an allusion to the particular spot whose very dust to him is dear.

The important point to notice here is that this process must take centuries. It is surely obvious, then, that the word "Canada" cannot call up the same feelings as the word "Scotland."

It is a reproach to Canadians, not that they do not regard their land with the ardent feelings natural to a native of the British Isles, for that is impossible, but that in many cases they have not learned to appreciate those traditions which might belong to them as Canadians. The Canadian, too, has his home, but if he gains breadth from travel there is a decided loss in the fact that homes do not frequently shelter one generation after another, that one individual has a dozen homes in the course of a few years. In the cases, for there are some, where three generations have grown up on the same farm, a distinct contribution has been made to the life of the community, provided there has been some intellectual impulse. Unfortunately in pioneer days the struggle for very existence was so bitter that many settlers forgot the higher things, unconscious that a desperate effort must be made if they were to keep alive the sacred memories of the past. Again, while the Canadian village has its church, its school, its town hall, and while in many cases these have individually represented high ideals, there has not been, and cannot as yet be, that common pulse, that feeling of widespread comradeship, that unity of tradition, which marks the old countries of Europe.

If we are told that in a thousand years Canada will in her turn develop a strong personality so that her name will call up in the minds of her children deep and passionate feelings such as, for example, Ireland's name evokes in the breasts of her sons, we reply that that may be true but that there is a better way. By remaining British and by retaining concrete, not merely sentimental, ties with the British Isles we form a vigorous branch of the ancient tree, receiving strength and yielding it in turn. We are not a mere seedling. It is to be hoped, of course, that there are some Canadians who even without any knowledge of their British ancestry, have sufficient love for what is represented by their homes, their schools, their churches, their institutions, to make them willing to lay down their lives. A man so poor as to love none of these things would hear no call of Empire or of anything else. But the all-important point to note here is that in thousands of cases all these things have an infinitely greater value in that they have a history going back for centuries, a history which is valuable to the world and especially valuable to us just because it is British history. We do well to recognize how these institutions

have been transplanted from Britain and adapted to our own needs. Very few Canadians have a home four generations old. Few congregations or educational institutions are a hundred years old. But has not many an Englishman felt a thrill of reverence and an access of strength when he has entered in Canada some humble but beautiful little structure that spoke to him of the parish church at home? Do not his sons benefit by that even though they have never seen England? Have not scores of our best Canadians come from Presbyterian manses, men who are infinitely richer in intellectual and spiritual wealth just because the manse has its roots in Scotland far back in the centuries. The same principle applies in the case of the Irish Catholics and the French habitat. I do not know how many Queen's men feel, but certainly some do, that 1841 was not a beginning but merely a transplanting and a continuing. True, all these institutions are valuable and inspire patriotism, apart from their long history, because they represent sacrifice and service, but service and sacrifice are much more natural when there is a tradition that one must serve and that is why we are thankful that these things have their roots in the distant past.

It would be difficult to name any man of Canadian birth with a more passionate and at the same time a more intelligent love of Canada than Principal Grant. Those who remember him will realize that his patriotism serves as a splendid illustration of the principles I have tried to make clear. He was enthusiastic in his love, brutally frank and fearless in his criticism. He realized the tremendous possibilities of the future and saw that our main business was to build patiently on right foundations, which, for him, meant British foundations. I quote the following from memory, but I think correctly:—"I have sat on blocks of coal in the Pictou mines, wandered through glens of Cape Breton and around Cape North, and driven for a hundred miles under apple blossoms in the Cornwallis and Annapolis valleys. I have seen the glory of our Western mountains and toiled through passes where the great cedars and Douglas pines of the Pacific slope hid sun and sky at noon-day, and I say that in all the four thousand miles that lie between there is everything that man can desire, and the promise of a mighty future." A mighty future! And whether as Presbyterian minister, University Principal, or critic of

public life, he was always eager to introduce British institutions and customs and alert to adapt them to the new conditions, so that we might have the strength of youth without its crudity. It is significant that he always called himself an Imperial Federationist, and valued the title.

Would not all this be possible with absolute autonomy? Is it not possible in the United States? To some extent, perhaps, but there would be a decided lack of historic continuity. We can all appreciate the things for which the American revolutionists struggled, but, as Carlyle pointed out long ago, there were some priceless things which they lost. Breaking from old moorings is always dangerous, even when necessary. When Luther broke from Rome, Wesley from the Church of England, Chalmers from the Church of Scotland, Queen's from the Presbyterian Church in Canada, it is open to the defenders of separation in every case to say it was inevitable and that the benefits far outweighed the loss. What they cannot say is that there was no loss. Had the leaders, and still more the followers, in all these movements possessed a stronger sense of historic continuity, then either the separation would have been averted or it would have been accompanied by less injury. The task some of us, therefore, would like to set ourselves as Canadians, before we acknowledge that absolute autonomy is our only refuge, is that of getting the benefits that are obvious in autonomy without sacrificing the other benefits of historic continuity not so obvious to the enthusiast for independence and freedom.

Let us revert for a moment to the United States. Cannot her citizens have all the advantages of historic continuity if they will? The "Co-operationist" may say to us, "Certainly, at the time of the Revolution the United States, in a bad temper, threw away many good things. These things would not be lost in a friendly separation. The United States could, if it would, appropriate all that is best in British thought and experience, just as Britain has appropriated the spiritual and intellectual treasures of Greece and Rome. The American universities are now doing this. Canada can and will do this, even if absolutely separated, politically, from Britain." The answer to this is that we Imperialists are not satisfied that the relationship between Canada and Britain should be nothing more definite than that between Britain and ancient Greece

or even ancient Israel. Britain is the rock whence we were hewn. Harold Begbie does not in the least exaggerate the feelings of those of us who value our blood-ties with the Old Grey Mother when he says:

"But by the great affirming of the lands we have knit as one,
By the love, by the passionate loyal love, of each separate freeborn son."

Ties of blood are easily forgotten, as I think I have proved, if people are careless about all externals, all symbols, all concrete tangible bonds of union. So long as brothers live under the same roof, they will easily remember without conscious effort that they are brothers. When they cease to live in the same house and are separated by thousands of miles, then a choice lies before them. In ignorance, or in weakness, they may fail to make definite and regular efforts to visit one another or write letters, may delude themselves with the shallow notion that true affection is not dependent on any such forms. In due course, as a consequence, they practically cease to be brothers, and their grandchildren are not even aware of relationship. For ignorant or weak people, then, geography is sure to prove stronger than history. But there is another alternative. I have already shown in detail how family history can be enriched when geographical difficulties are, I will not say annihilated, but surmounted. The men and the nations that know their high calling will laugh at those who tell them that geography is stronger than history. This, at least, is the faith of Imperialists.

Our ties with Britain would soon mean little or nothing if we secured all the autonomy that some "Co-operationists" desire. The unity that they expect to retain would be a soul without a body, and so far we have not succeeded in making use of disembodied spirits. What they fail to emphasize is that we must have concrete organs of co-operation, not merely friendly feelings. There is an obligation, for example, resting upon Canada, in connection with the Hindoo question, to consult the interests of Britain and of the other colonies, not merely her own interests, an obligation very different from those we recognize towards the United States or other friendly countries. It would have helped considerably at the time of the *Komagata Maru* incident if there had been definite machinery by which the right of Canada to act, and the right of

Britain and of India to be consulted, could have been, not only recognized, but easily and promptly expressed. We have shown some capacity as a race for organizing machinery for all kinds of new situations as they arose. No one wants a written constitution with the idea of providing for all future contingencies. We shall arrange our programme as we go along. We shall let the Constitution of the Empire grow as the British Constitution has already grown. Where we require machinery to meet pressing situations, let us provide it. Where we have machinery that is inadequate, let us readjust, improve and develop it. The constitution of Canada, for example, can be amended only in the British House of Commons. If this clause should ever prove injurious in its effects, we could then face the whole situation and if necessary have a change made, but it would be folly to make any drastic change without carefully considering the bearing of our action upon the whole Imperial situation. What I plead for is definite, external, formal machinery, just as I plead the necessity of definite regular external letters between members of a family.

Let us refer once more to the United States. To carry out the parallel between brothers and nations, we may perhaps compare our relations with the Americans to those existing between grandchildren who are attempting, somewhat awkwardly, to come together long decades after their grandparents had separated. Our relations with the Americans can, and ought to, be friendly. Business partnerships are often very friendly. But this is not "passionate loyal love," whatever it may become in the distant future through the realization that we were originally the same stock. Also it may be noted that if we were as independent as is the United States we would be free from many embarrassments in which the tie of Empire involves us. Every Imperialist will gladly admit that, knowing full well that love always entails inconvenience, embarrassment and suffering. Again it has often been pointed out that the United States is a splendid melting-pot. It is not so often pointed out that in this melting-pot all the reverence and love of his own traditions which the immigrant brings with him is apt to be boiled out. There is considerable danger, too, of this happening in Canada, and I think I need not labour the point farther, that one of our greatest safeguards against such

danger is the close connection that we now have with the British Islands.

Is British connection, then, the only thing that will enable us to preserve and develop some of that sense of historic continuity without which a people is doomed? No, our Churches might do something. What are they doing? I will deal only with that Church which I know intimately. With perfectly splendid opportunities for making a distinct contribution of this kind to the life of the Dominion, the Presbyterian Church in Canada is not only sadly lacking in a sense of historic continuity, but for the most part is little aware how fearful a loss will be entailed if it continues to put its whole strength into organization and all varieties of methods for lashing things into some semblance of life. Church leaders are possessed of the importance of getting immediate results from "campaigns." By "campaigns" is meant flooding the country with circulars and sending forth troops of ministers to rush from place to place, exhorting such gatherings of human beings as they can muster to give money and be good. Sometimes one is tempted to say that scholarship and beauty have been crowded out of the Church, for, like the early pioneers, most Presbyterian ministers do not realize the necessity of making a desperate effort to safeguard that leisure, in their case leisure for the study, without which scholarship, beauty, and a sense of historic continuity are sure to disappear. Fortunately there is an admirable, if small, minority which will yet prove the salvation of the Church. Here and there one is often surprised and encouraged to meet a man who realizes that he can make his exhortations to generosity and decent living effective only if he spends many quiet hours with the great ones of the world's history, laboriously appropriating their message. Such a man, too, probably wears a Geneva gown in the pulpit, knowing that it not only adds dignity to the service but forms a link with all those whose lives have been influenced by the saints and scholars once gathered in Geneva as refugees for conscience' sake. About a quarter of a century ago, some such men were appointed to make a hymn-book. Long days and nights were spent in committee. Weary hours of exhausting work were done at home by men already overworked. Literary ability was called for, also a knowledge of music, of hymns, of times, of Church History, and of the deepest needs of human

hearts. After some years the book was produced. There was little applause and no remuneration. There were no startling statistics to report, no new communicants, no increased attendance at church. Was all that weary work of little account, then? A thousand times, no. Amid all the extravagances of evangelistic meetings, the crudities of impromptu drivel in prayer or sermon, the bareness of barn-like structures called by courtesy churches, a Presbyterian congregation always possesses in the Book of Praise something that imparts dignity and a wholesome variety to the service, and a strengthening sense of the Communion of Saints. And the ministers with a sense of historic continuity are not all dead. The Book of Praise is now being revised, though few people know what arduous toil is being spent upon this revision.

In Church or State, then, there are ties with our past worth recognizing. It is worth continuous effort to preserve them. In such matters it is dangerous to be indifferent and folly to be contemptuous. Sometimes our temptation is not so much to contempt as to jealousy. Such terms as "Concentration," "Downing Street Rule," "Taxation without Representation," create terror in some minds. They suggest things that were once real abuses. I confess that I am not afraid that Canada will be crushed or dwarfed by these things. Some kind of concentration, and a considerable amount of it, is much to be desired and quite compatible with a sufficient amount of independence to obviate any danger that we might fail to develop all our faculties and resources as a nation.

I have mentioned the minority in the Presbyterian Church who represent the ideals that must ultimately dominate. In closing this article I wish to notice briefly the saving remnant of Canadian-born in our first contingent. For there is a goodly handful of Canadian-born, now at Salisbury Plains, that answered the first call to supreme sacrifice for the Empire's sake. I speak of this remnant with tremendous satisfaction because their action has made it possible for me, Canadian-born as I am, the son of Canadian-born parents, and the grandson of a Nova Scotia woman, to hold up my head and speak with pride of my country. It is to be hoped that there are some among them who, even if Canada had in some bygone catastrophe, been separated from Britain, would be found willing to lay down their lives for their own country. Possibly

there are a few among them who say that they are not fighting at all for the Empire, merely for Canada, though I do not think so. Certainly the overwhelming majority are men who would no more think of agreeing to Canadian independence than of committing suicide. Would this be possible if the Empire were not a unity? If Canada had been assured at the outset of the war that Germany would not attack her, and if the Canadian Government had agreed to remain neutral on that condition, there might still have been Canadians offering to enlist in Belgium in the cause of honour, but the very absurdity of the suggestion makes one thing clear,—that, no matter how much we admire the Belgians or the Russians, our relations with them cannot be the same as our relations with Britons. We all admire the Belgians. No token of gratitude to Belgium from the Canadian people could be too generous. But even when the war is over and Belgium has been recompensed, they will still be Belgians and we shall still be British.

Whence came this gallant little band of Canadian heroes who at the critical moment saved their country's honour from a stain and who, I believe, are showing the spirit of the Canada that is yet to be? Mostly from the cities, where men do not so easily cease to feel the world's pulse; partly from the universities; a very few from the rural parts, a few who had preserved some sense of historic continuity. In Britain the artisans and clerks of the cities have done no better than the men from the country, the mountains, the sea. Why? Because there every village has its memories of those who in times past have gone forth to die. In the Hebrides Islands there are villages where every house has sent a soldier to the front. As for the Universities, where one feels the throb of the "great days done" as nowhere else, the record is almost astounding. Out of 210 Balliol students, 150 are on the Continent and 30 more enlisted to go. I repeat once more, historic continuity. I know intimately a few of those in our first contingent. They are men who whether in roaring city or quiet village were accustomed as children to understand that they were British. They came from homes where there was a sense of historic continuity. Long before this war broke out, they knew not only a love of their own hearths but the thrills of

"Never the lotus closes, never the wildfowl wake,

But a soul goes out on the East Wind, that died for England's sake."

War is hell. Quite true, and if we were living in suffering Belgium just now we might be utterly unable to see anything but the hellish aspect. The crucifixion was hell, but it was other things besides. And so is this war. The flower of Canadian manhood has gone, or is preparing to go, from our shores and may never return, the kind of men to whom the country must look for salvation from political corruption and sordid materialism. How, then, will our national ideals be preserved, much less purified? "The blood of the martyrs is the seed of the Church." From the bloody fields of Europe will rise a new spirit which will leave none of us as we were.

Many in Canada will begin soon to realize the meaning of lines that do not require explanation in Britain:

"If blood be the price of Admiralty,
Lord God, we ha' paid in full."

Possibly by "Admiralty" Kipling meant something as vulgar as his critics say. But to many of us the word now suggests an even justice and a spirit of liberty for Britons and for humanity,—and probably Kipling thought of that. And those of us Canadian-born Imperialists who have sent our best and bravest away, who see mothers and wives showing the stuff of women that make a country worth living for and dying for, feel that the days of princes and heroes are not past, that it is easier to believe in God and Immortality than it was six months ago, and that for many a long day yet we want to be known not only as Canadian-born, but as sons of the Empire.

LOGIE MACDONNELL.

Fergus, Ont., Dec., 1914.

ALFALFA, THE CONQUEST OF THE AIR.

ON the 17th of December, 1903, the late Wilbur Wright of Dayton, Ohio, made the first human flight in an aeroplane at Killdeire Hill, in North Carolina. He flew about 290 yards in 59 seconds. That is about one-sixth of a mile in one minute or at the rate of ten miles an hour. When Bleriot crossed the English Channel on the 25th of July, 1909, the world stopped to read the account. Recently a French aviator has made a trip of 3,500 miles. Another Frenchman flew 627 miles in 13 hours 18 minutes without alighting. When we read that a French aviator had risen to a height of 20,295 feet we shivered with the cold. Now we read of looping the loops, a proposed trip round the world, and an attempt to cross the Atlantic as a matter of course. We simply say "the conquest of the air" has been accomplished and we look for something new and more startling. I do not pretend to be able to give you anything more startling or more romantic than the story of the aeronautic conquest of the air during the past ten years; but there is another story of the conquest of the air that possesses some romance, and that means more to us at the present day than aerial flights from Paris to Cairo and from Cairo to the Cape. If I tell you that it is intimately connected with the food that you eat and the clothing that you wear your interest may be quickened. It is linked up with your life and your health. Pure air, pure water, pure food are the three important necessities of the sound body in which the sane mind for the brief period of this life makes its abode. Our breathing, our continuance of living, are directly contingent upon the air. The water that we drink may be said to come from the air, and over ninety per cent. of the food that we eat comes from the air. Our food is ultimately derived from plants. If we eat the flesh of animals or the products of animals such as milk or eggs we simply appropriate that which the animal organism has worked up from the plants which the animals take as daily food.

Water forms from 10 to over 90 per cent. of all plants. This, as you know, is a simple compound containing only two chemical elements—hydrogen and oxygen. We are more or less familiar with starch, sugars and fats or oils which plants

contain in varying quantities. These consist of three elements—hydrogen, oxygen and carbon. Such substances form the fuel in our food which supplies us with material for keeping our bodies warm and also with the fuel which is the source of energy in our bodies. Then there is the ash or mineral material out of which bone is constructed. In plants it constitutes from 1 to 8 per cent. with an average of about $2\frac{1}{2}$ per cent. There is, however, another class of constituents of plants and animals more complicated than the starch, sugars and oils, known as albuminoids. Examples of these are the lean portion of meats, the white or albumen of eggs, the casein or cheese of milk and the gluten of wheat. You will see at once that these are found in the more expensive foods—in fact it is these that determine to a large extent the higher price of these foods. In addition to the three chemical elements already mentioned these albuminoids contain nitrogen. The most important problem in agriculture to-day is that of putting nitrogen into growing plants. The man who solves it holds the key to success in farming, that is in producing food for humanity.

An acre contains over six million square inches. The air presses upon this at the rate of sixteen pounds to the square inch. Seventy-seven per cent. of this air is free nitrogen. If you take your pencil and figure out what this means you will be overwhelmed at the inexhaustible amount of nitrogen that covers this earth, free itself, free to every animal and free to every plant. As the struggling cereal growing on an impoverished soil droops and starves and dies we can almost hear its mournful wail, "Nitrogen, nitrogen everywhere, and not a speck to eat," and why not? Simply because the wheat, the oats, the barley is able to take up the nitrogen that it requires only through its roots in the form of dissolved nitrates. We hear much of utilizing our undeveloped resources. Hundreds of millions of dollars are being spent in developing, perhaps we should rather say in exhausting, at least in utilizing our natural resources of timber and minerals and fisheries and soils. And yet we do not hear much about the attempt to realize upon this incalculable, inexhaustible, universal supply of nitrogen which is so necessary for the feeding and clothing of us all. And yet it is being done and I propose briefly to tell you something of this human conquest of the air.

The old Roman farmers grew peas and beans and lentils. These were pod producers and because they were plucked or gathered by hand they were called "legumes" and the botanical family to which they belong is known as *Leguminosae*. To the three plants mentioned we may add the clovers, tares or vetches, and lucerne or alfalfa. The Roman farmer learned to grow some of these legumes, not only because they gave rich food, but also because they would grow on light or poor soil and when plowed under would enrich the soil. The farmers of modern Europe also made sure to have a legume in their rotations.

Gradually, as the chemist began to make a scientific study of crops and their growth, he found that when wheat exhausted the soil of its nitrates that crop could no longer be grown unless it were fed on nitrates; but that legumes which have a higher percentage of nitrogen compounds would grow on soil having little or no nitrates and would enrich the soil so that wheat could once more be grown.

The next time that you are in the country and come upon a field of clover, pull up one of the thrifty plants. On its roots you will see small black balls or nodules that suggest parasitic growth. Pull up a weak or sickly looking plant. You will see few, if any, of these nodules. The same is true of all leguminous plants. Apparently there is a close connection between these nodule growths on the roots and the vigorous growth of the plants. None such are to be found on the cereal or grain producing plants.

Hermann Hellriegel was born in Anhalt, Germany, in 1831 and died in 1895. In the announcement of his death to the National Society of Agriculture at Paris, of which he was a foreign member, it was said that he was "the immortal author of the discovery of the fixation of gaseous nitrogen by leguminous plants through the medium of their nodules." Remember that this was said by a Frenchman in regard to a German. Science knows no distinction of race or boundary lines; it tries to forget the siege of Paris.* Hellriegel's discovery was made in 1886, nearly thirty years ago. Boussingault in 1838 concluded that plants were unable to absorb free nitro-

*This was written prior to August 1st, 1914.

gen. From 1849 to 1856 Ville, another French chemist, claimed to have proved that some plants are able to take up free nitrogen. The scientists of France, Germany and England fought a battle royal over this question. In 1877 Schloesing and Muntz proved that nitrification or the forming of nitrates in the soil is the work of microscopic organisms. There was still a perplexing question to be solved—these nitrates are most important for the feeding and growth of cereals, but had no effect in promoting the growth of clover and other legumes, although the latter contained in leaf stalk and root much more nitrogen than the cereals. What was the explanation? Hellriegel gave it in 1886 when, before a meeting of scientists in Berlin, he reported that he and Wilfarth had proved conclusively that the nodules on the roots of the legumes were filled with minute organisms that in some way take up the free nitrogen of the air and pass it on in soluble form into the plant. The importance of this discovery needs little or no enlargement. Plants grow in a great ocean of nitrogen, but Tantalus-like they are unable to drink the draughts that touch their very lips. Who could have guessed that the little black excrescences on the roots of the clover were the micro-organic agents to effect the conquest of the air for mankind!

I can well recall the interest that was aroused in the world of agricultural science at the time. When I was a teacher of agricultural chemistry (1886) my classes were using a textbook written by a celebrated English chemist (Warington), and published in 1883. Here is what the students read (*The Chemistry of the Farm*, p. 46):

The nutrition of leguminous crops is not at present perfectly understood. A good crop of red clover, when cut for hay, removes a large quantity of nitrogen from the land, but it nevertheless leaves the surface soil actually richer in nitrogen than it was before from the residue of roots and stubble left in the soil. From whence is this large quantity of nitrogen obtained? It must be procured either from the subsoil or the atmosphere. The former seems the more probable, as experiments have hitherto failed to prove that leguminous plants have any special power of obtaining nitrogen from the air."

This was the teaching in 1883 of Warington, the chemist of the famous Experimental Farm of Lawes and Gilbert at Rothamsted in England. When Hellriegel made his celebrated

communication to the Agricultural Section of the German Naturalists at Berlin on the 30th of September, 1886, Dr. Gilbert (afterwards Sir Joseph Gilbert) presided at the meeting. Lawes, Gilbert and Warington followed up these experiments and confirmed fully the findings of the German scientists.

You will now understand what a wonderful advantage it is to a young, progressive, thinking farmer to know that these clovers and allied plants have the key to unlocking the riches of the air. Clover does not need to carry four leaves to bring good luck. The land that flowed with milk and honey was a land that grew clover or some other legume—probably alfalfa. Clover and riches go hand in hand in agriculture.

You may recall the old story that red clover could not be grown in Australia until old maids became quite numerous. Humble bees are necessary for fertilizing the blossoms. The field mice destroy the ground nests of the bees. Cats destroy the mice. Old maids are the special guardians of the cats. Perhaps this may be another example of sweetness and light linked together for the good of humanity.

Leaving clover, let us return to alfalfa, probably the most important of the legumes or nitrogen gatherers. It is also known as lucerne, purple medick, Spanish clover. Its botanical name is *Medicago Sativa*. If we seek the place of origin we must go back to the country east of the Mediterranean, once more we are in Eden. It was upon it, doubtless, that the flocks of Abraham fed, and when David in his pastoral psalm referred to the "green pastures" in which his flock was made to lie in all probability he referred to the rich alfalfa so common in that eastern land. The very name alfalfa is Arabic for "the best fodder." Botanically it is an erect perennial herb with branched hollow stem, one to two feet high, having trifoliated leaves, short dense racemes of small yellow, blue or purple flowers and downy pods coiled two or three times in a loose spiral. It has a long tap root which will extend sometimes 15 feet or more into the soil. Its botanical name, *Medicago Sativa*, indicates its place of origin—*Medicago*, a plant from Media, and *Sativa*, a plant that is grown from sowing seed, thus distinguishing it from wild or uncultivated varieties such as the tares that sprang up amid the wheat.

From this original Edenic home it has spread north and northeast through Siberia, crossing the Arctic Circle, and

pushing its way eastward into Thibet, Mongolia and China. According to Pliny it came west, first into Greece and thence into Italy. Cato does not mention alfalfa as one of the legumes that he used, but Varro in his *Three Books of Rural Affairs* says "You should take care not to plant alfalfa in soil which is either too dry or half wet but in good order." Therefore we conclude that it reached Italy from Greece in the first century B.C. From Italy it came westward to Spain, and it is to the Spaniards that we owe the preservation and extension of this valuable plant. The Moors of Andalusia carefully preserved it, while it died out in Italy during the dark ages. From Spain it moved north into France and has ever since been grown there under the name "Lucerne." The Spaniards brought it to Central and South America and to California and left in it one of the most valuable contributions to the wealth of this western hemisphere. Columella, the Spaniard, gives full instruction as to this plant. Let us make a quotation:

"But of all the legumes, alfalfa is the best because when once it is sown it lasts ten years; because it can be mowed four times and even six times a year; because it improves the soil; because all lean cattle fatten on it; because it is a remedy for sick beasts; because a jugerum of it (two-thirds of an acre) will feed three horses plentifully for a year."

So much for Columella, who lived about 40 A.D. One of the most successful dairy farmers in Ontario to-day says that he can grow over five tons of alfalfa per acre every year, put it in his barn at a cost of less than \$2.00 a ton, and that ton for ton it is about as valuable as wheat bran, and wheat bran is worth from \$20 to \$22 a ton by the car load on the track in Toronto. This man when he sows a field of alfalfa sends to the Agricultural College for a bottle of nitro culture and treats his seed before sowing it. This nitro culture is nothing else than a culture of the micro-organisms similar to those found in the nodules growing on the roots of the legumes. To ensure a good catch of alfalfa you can thus "treat" the seed or you can scatter over the soil some other soil containing the bacteria.

And yet some people still think that agriculture is a dreary, uninteresting occupation. And so it is to many, to those who do not know, to those who do not think, to those to whom the

world is dark, to those whose eyes have not yet been opened. No more potent prayer was ever uttered than this:

"Open thou my eyes that I may behold wondrous things out of thy Law," and how applicable to the great world of agriculture.

"For just experience tells, in every soil,
That those who think must govern those who toil."

Let me pass on to the next chapter. While wheat is at present apparently the money maker of Western Canada and corn that of the Central States, alfalfa is the great reliable crop for permanent success on a great variety of soils and is the only hope for large areas of dry soils and of irrigable regions. Therefore we may look to it as one of the coming crops of Canada as well as of the United States. "Wheat is King" has been a proverb with us as with most English-speaking countries and we are apt to think of it as the greatest crop in the world. It is with us one of the great measures of growth and production. There are seasons of the year when in Canada we think of nothing but wheat, that is as the barometer of our national condition, and we are apt to attach an undue proportion to it. We overlook the fact that our grass in meadow and hay field is far more valuable than our wheat crop. It will be to the best interests of Canada if in addition to thinking and talking wheat we begin to think and talk alfalfa. Time was when wheat was *the* crop of Ontario, but we have given up wheat for more valuable crops. An average crop of 25 bushels of wheat is worth generally less than \$25. Five tons of alfalfa is worth much more. Wheat gradually impoverishes the soil, alfalfa continually improves and enriches it. Wheat is limited in range by soil and climate, but alfalfa in its great varieties is found from the tropics to the Arctic circle. Prof. Hansen, the great authority on alfalfa, says:

"The Siberian alfalfas are found growing in abundance in dry regions where the mercury freezes in the thermometer in the winter, often with no snow on the ground. The summers are so dry and hot that camels find a congenial home. If we could clothe our naked hillsides with these wild Siberian alfalfas we would increase their present carrying capacity for stock from seven to eight times."

Siberia. The very mention of the name sends a cold shudder over us for we think of long lines of exiles and the raw blasts of chilling winter. And yet the Britisher is to-day supplying his table with Siberian butter where once Canadian butter had its place. Perhaps some day in the future we shall see Siberian alfalfas supplementing our wheat and again we may be shipping Canadian butter to British markets from Northern Alberta and Northern Saskatchewan and even from Northern Ontario.

While wheats are spread by man, the nitrogenous legumes are spread by nature. Alfalfa originated, at least within human determination, in the hot dry country lying between the Mediterranean and India. Whether there was one original variety or whether there were several is matter for controversy. No less than 50 species are to be found in the Mediterranean region in both Europe and Northern Africa and also in Western Asia. Alfalfas form some of the principal plants of the oases of the African deserts and one variety has been found in Northern Siberia in latitude 68 degrees North which has a recorded minimum temperature of —90 degrees Fahrenheit. Prof. Hansen has gathered seed in latitudes 50 to 55 North and brought them to America to test out on the bleak hillsides of Western States and the far northern sections of Canada. One of these varieties, *Medicago falcata*, the alfalfa with the sickle shaped pod, he says "is no doubt an important factor in making the rich cream and butter for which Siberia is becoming noted," and he further states that his own belief is that "these new plants will extend the present alfalfa and clover limits as far north on the American continent as anyone will wish to farm." The growing of alfalfa therefore means that man and nature may work together most harmoniously and, provided the right varieties are grown, success in their production is almost certain.

And then there is another important contrast between wheat and alfalfa. The former is shallow rooted, the latter has long searching roots that will penetrate the soil as far as nature will permit. Wheat growing means simply the drawing upon only one of the three great sources of wealth. What are the other two? The lower levels of the soil and the air above the soil. And it is in the utilizing of these that the legumes, and particularly alfalfa, may be one of our most important

implements or machinery. Alfalfa with its deep roots goes for much of its food to the second farm that lies under the first or surface farm, and through the nodules on its roots draws on the unlimited supply of nitrogen in the air, thereby getting for nothing its most valuable food constituent. This making hay out of air and sunshine with a minimum of soil is a wise and economical method of producing food. Herein you see the laying of a foundation for the producing of beef, bacon, mutton, milk, butter, cheese, and all those other foods which are to-day among the expensive things of this earth. The conquest of the air from an agricultural standpoint in its relation to human food is a subject of as great immediate importance as the aeronautic flight from Paris to Cairo. It may not be so spectacular but it should be of more human interest and concern.

Alfalfa is a name to conjure with. Recently I saw in a window on one of the main streets of Vancouver an attractive advertisement of a California land company—"Alfalfa lands for sale." "Come to California and buy land on which you can grow alfalfa." And there were the pictures of the land of plenty, fields covered with blooming alfalfa. And there were the plants with their long roots and luxurious tops, and in the midst of it all was a pile of alfalfa meal, consisting simply of leaves and stalks ground up into fine powder, looking fit even for human food. And why not? It may be that before many days we shall have "processed" alfalfa meal sold to us in packages as now we have Quaker Oats, Tillson's pan dried, and Corn Flakes, and the other forms of package cereals which in their paper boxes assume such haughty airs and higher prices in comparison with the old-fashioned and reliable oatmeal and corn flour of our boyish days. But while alfalfa may be grown luxuriantly in California, it may be grown and is now being grown also in British Columbia, and in Alberta and in Saskatchewan, in fact in every province of Canada, for through its many varieties it is suited to nearly all soils and all climates. The Government of Saskatchewan has been holding a competition with prizes amounting to \$6,300 for ten acre fields of alfalfa grown on non-irrigated land. Manitoba has a series of demonstration plots to show the farmers what can be done to supplement wheat growing. Every province in Canada is doing educational work. Failures have been numerous in the past thirty years mainly because farmers have tried tender

varieties on soils that were unsuitable and under climatic conditions that were unfavorable. Now we have new varieties and are able to work with greater hope of success. We have available tender varieties which can be grown on rich farm lands and on irrigated soils that will permit cutting from three to six times in the year and that will yield five tons and more per acre, and we have varieties that can be grown on light, dry soils and maintain themselves through the rigors of northern winters yielding from one to three tons per acre.

Alfalfa is becoming known because of the bringing to us of new hardy varieties and the proving of them out in the Western States and in Northern and Western Canada. And to whom is this due? Largely to the work of one man, Niels Hansen of South Dakota. Who is Hansen and what has he done? To answer that I must tell you briefly the story of the explorer whose deeds in my opinion equal those of any man who in recent years has set sail for unknown lands, or ever dared the rigors of the polar circle. You have heard of Nansen the Norwegian and his expedition into the Arctic regions to discover new lands, and of his success. Have you heard of the expeditions of Niels Hansen into the Arctic regions to discover new plants, and of his success?

Niels Hansen was born in Denmark in 1866 and came to America with his father in 1873. The family located at Des Moines, Iowa, in 1876 and the son went to the Iowa Agricultural College at Ames where he studied horticulture under the direction of Prof. J. L. Budd, one of America's greatest experimenters and teachers. In time Hansen was appointed Assistant Professor of Horticulture. Prof. Budd had gone to Europe in 1882 and returned with a large collection of hardy Russian apples, and from his observations and experiments started a new line of fruit investigation that is still influencing fruit growing in Canada as well as in the United States. We have not time to tell of his work though there is a very interesting Canadian chapter in connection with it. Hansen's eyes were turned to Russia as a country for study and investigation and he made a short holiday tour thither in 1894. In 1895 he was appointed Professor of Horticulture at the Agricultural College of South Dakota. Two years later, in 1897, James Wilson, a Scotsman, President of the Iowa Agricultural College, was selected as Secretary of Agriculture for the United

States. He recalled the work of Budd and he knew Hansen, the former young, energetic, ingenious member of his staff and he appointed Hansen as his first foreign plant explorer. From June, 1897, to March, 1898, Hansen toured through European Russia, Turkestan, Western China and Siberia. He made an overland journey of 2,000 miles by wagon and sleigh from Turkestan to Omsk in Siberia and brought home five car loads of seeds and plants. Among other things, he brought the first Turkestan alfalfa, a variety acclimated to colder regions than the Spanish alfalfa of California. Through it the alfalfa area was extended to Northern States and to parts of Canada. On account of the Russo-Japanese war and revolutionary troubles he was not able to repeat his exploration until 1906 when he made a world tour, England, Denmark, Lapland, Finland, Siberia Manchuria and Japan being visited. He returned with a large collection. He determined the northern limit of the common alfalfa with the blue flowers. But on this trip he found three new yellow blossomed varieties growing north of the limits of the blue blossomed alfalfas. They were growing in the arid regions of the cold north lands and produced fine forage. He was able to bring home seed of only one, *Medicago falcata*, the sickle podded variety. The lure of Siberian exploration had him in its grip, and so again in 1908 he set out on his third exploration for the Washington Department of Agriculture. Asiatic cholera was rampant but that did not deter him, and on the 10th of February, 1909, he returned to Washington with 300 lots of seeds and plants, alfalfa and clover seed gathered from the wilds of subarctic and even arctic Siberia. On the 8th of November, 1913, Prof. Hansen returned from his fourth trip to Central and Northern Asia. In a letter which I received from him dated 6th January, 1914, he says:

"I believe firmly these new alfalfas (some of them) will go to the Arctic Circle on this continent. There are a number of men in the Canadian Northwest co-operating with me and testing out these new alfalfas." Scientific investigation knows no boundary lines. This indomitable Dane made his fourth trip on a grant of \$10,000 voted by the State Legislature of South Dakota in a Special Act in which his name was specifically mentioned as the man to carry out the work. And yet while the servant of his state he is working for Canada. He is getting results, he has brought back seeds that will produce

plants that will grow on the roughest, driest, coldest plains and hills of the States and Canada. He has endured hardships, he has dared the plagues of the East, he has ventured into forbidding regions, he has risked health and life, and he was won out. Following the usual course he should sit down and write the record of his travels and his thrilling experiences and both he and his publisher would make a fortune—but, no, he has not time, even a letter from him may be prized as valuable. He is too busy, he is a servant of the people, a man of men, one who is worth knowing. He may not amass wealth but he is creating it. He is making it possible for the desert places to blossom with alfalfa and clover. To know such a man or to know of such a man is to confirm our hope of humanity and it is a sincere pleasure to help even in a small way in making you acquainted with him and his work.

The report which Prof. Hansen prepared for the Washington Government in 1909 descriptive of his three trips covered only 22 printed pages accompanied by a map of his journeys. It is plain, matter of fact, there is no romance in it, but you can read that into it. You can picture him starting out on the trail from Southern Asia following the plants north and east, sometimes turning into valleys shut in by high, forbidding mountains, with his caravan closely guarded against the onset of bandits, now crossing deserts where plants are few and far between, at last overtaken by winter on the Chinese frontier. But his precious seeds and plants must be saved and a 700 mile trek through snow and storm brings him to Omsk and all is well.

And here we must leave the story of this man—a Dane, a descendant of the early explorers, comes to America, he gets an inspiration from his teacher, he sees a young man's vision, he makes dash after dash into the unknown regions of Central and Northern Asia, he returns with the possibilities of growth for barren lands, he freely gives us these new-old plants that like himself have travelled far from their original home, and has thereby given us new machinery for the conquest of the air and the extension of food production.

For thirty years and more alfalfa has been grown here and there in Canada but only to a limited extent. Now, however, our governments are encouraging its production and the work of Klinck at Macdonald College, Que., of Zavitz at Guelph, and

of Bracken at Saskatoon will some day be fully recognized as contributing towards the development of a great national product. We have not space to enlarge upon this, but any who are interested in the subject will find an extensive resumé of all the work being carried on in Canada in *The Agricultural Gazette*, Ottawa, April, 1914. Among other things you will there find the story of how Prof. Klinck found by chance a plant that reproduces itself by underground roots.

Wheat, unlike alfalfa, cannot draw down directly the nitrogenous riches of the air, but man has found out a way and it may not be inappropriate to conclude this sketch of the peaceful conquest of the air by briefly telling it.

The rains carry into the soil out of the air quantities of nitrogen compounds, small it is true, but of some importance, for combined nitrogen is a most valuable substance in the soil, especially for cereals. Have you ever noticed how improved in color and life the grass is after the disappearance of a temporary fall of snow? It also carries down ammonia out of the air. One of the benefits of an electric storm is the formation of nitrogen compounds. The black cloud that suddenly darkens the sky and that is rent and scattered by flashes of lightning, terrifying mankind, carries food and life, for in the clearing of the skies and the downpour of the rain nature is sending into the earth the most valuable contribution that she can give to the growth of plants. This addition to the soil is utterly inadequate to maintain the fertility for our cereal crops and it takes but a few years of continuous cropping to reduce a good soil to an unproductive state. We cannot depend upon the rains alone. Even the immense deposits of nitrates that Nature has stored up in the dry strip of land in South America will soon be exhausted. It is located in Chile, 20 miles from the Pacific coast, shut in from rains by a plateau 5,000 feet above the level of the sea. How then shall we feed the soil so that we may grow wheat? The legumes as we have seen are the cheapest and most rational way of taking up the nitrogen of the air. But man is an investigator and experimenter. If Nature by electric flashes is able to combine the nitrogen with oxygen and hydrogen, why cannot man do it also? In 1900 two American scientists, Bradley and Lovejoy, by means of electricity produced by the Niagara Falls were successful in forming nitrogen compounds out of the air, but their process

was too complicated and too expensive. Where they failed, however, two Norwegians succeeded and the processes worked out by Professors Birkeland and Eyde are in operation to-day. There are four plants in the mountains of Scandinavia turning air into nitrates by electricity generated by water falls, and producing it at a cost a little less than Chilian nitrate.

Thus ends our story of the conquest of the air—one of food, of peace, and of life. What a contrast to that other story now in the acting—one of destruction, of war, and of death! Canada has pointed to her great resources in mines, forests, waters and soils. We have a resource of far greater extent in the inexhaustible atmosphere. An agricultural growth will largely turn upon our exploiting this resource. How profitable it would be to condense the air and ship it abroad in beef and bacon, in butter and cheese, in fruit and honey! That indeed would be the highest national economy. And it is practicable.

C. C. JAMES.

FIFTH F. C. C. ENGINEERS AT VALCARTIER.

FROM time to time articles have appeared concerning various phases of the work connected with the mobilization of the First Canadian Expeditionary Force at Valcartier Camp last autumn. These have been of a more or less general trend, dealing with the magnitude of the task of transporting, equipping, housing and feeding the many men and horses which were brought together on that occasion. Some articles have detailed the number of horses at the camp and the amount of fodder required per day, the carloads of daily provisions and the men and vehicles necessary to transport and distribute them; the number of loaves of bread and the quantity of flour necessary to make the same, in short the details of the thousand and one things that go to make up a military camp. These articles have all been very interesting and instructive and have given to the reader some idea of the task undertaken and carried through so successfully by those in charge.

In such a camp, located on premises not formerly used as a training ground the engineering profession came in for its full share of work. The camp was a maze of waterpipes and electric wires, the larger part of which was installed by contractors, under the supervision of the camp engineer; but there were also many and various things to be done which had to be attended to the moment they appeared, and it is to some of these and the body of men called upon to do them that I wish to direct attention.

The 5th Field Company of Canadian Engineers is a distinct University Company, comprised solely, until the departure of the Second Contingent, of graduates and undergraduates of the School of Mining, which forms the Science Faculty of Queen's University. It was started on its career in 1910 by some of the Staff of the School of Mining, chief among whom was Professor Alex. Macphail, since Major of the Company and now a Captain with the Engineers of the First Canadian Contingent at Salisbury Plains. So that in years it is quite young.

When the order came to proceed to Valcartier for Home Service, the middle of August found the members of the Corps

scattered from the Atlantic to the Pacific. On August 16th, telegrams were sent to the men telling them to report at once, and on August 18th the Corps entrained for Valcartier, to be followed later by those too distant to reach Kingston within the two days. They arrived at Valcartier shortly after the Army Service Corps, and before the infantry, when the camp was just beginning to take shape.

Several days elapsed before any other engineering corps or any infantry regiments made an appearance, and during those days the 5th Field Company was busy making roads passable for heavy traffic and putting in temporary pumps for water supply. The repairing of roads and surveying the sites for infantry and artillery lines as well as the survey and opening up of other camp roads, occupied most of the time until the arrival of the other engineering companies. On the arrival of the latter the 5th Field Company was split up into the "overseas" and "home" sections, and from that time on the "overseas" section along with the other companies spent most of their time in drill and military engineering projects while the majority of the camp engineering work (not taken care of by the various contractors) fell to the "home service" section, under the direction and supervision of the camp engineer.

The "home service" section of the 5th Field Company was unique in the sense that it was comprised of graduates and undergraduates of every branch of engineering, and owing to that fact, the work undertaken and completed by the Company was as diversified as the engineering profession as a whole. The "wiring gang", so called, consisting of electrical engineering students, wired the interior of all the large marquees, the banks, offices, headquarters, telegraph offices, post office, minister's house, ordinance stores, hospital tents, medical laboratories, etc., in fact, practically all the interior wiring of the camp. The civil engineers surveyed railway sidings, infantry and artillery lines, parade grounds, camp roads; built and repaired crossings, macadamized and corduroyed roads and kept them in general repair. The mechanical engineers were employed principally on the water supply system, repairing broken standards, putting in shower baths and horse troughs, extending water mains, etc. The draughtsmen were employed at headquarters on camp surveys and plans of the camp

grounds, while others made stencils for sign posts. The number of these latter ran almost to the thousand mark.

Much of the work accomplished could not be assigned to any particular class of men. Those with carpenter's experience built offices at headquarters, erected platforms for divine service, screens for moving picture shows, filing pigeon holes for the post office, cleared ground for and built fence around cemetery, fence around pumphouse, notice boards, guard house, quarters at ordnance stores, addition to engineers' stores building, and many other things.

Military engineering as such was carried on by the "overseas" engineers especially, but the "home service" section also had a share and built barbed wire entanglements around the power house. Watering places along the Quebec road were fitted up with horse troughs and force pumps and water supply maintained for the horses when they moved from Valcartier to Quebec to go on the boats. These were four in number located, one five miles from Valcartier Camp, one at Jeune Lorette, one at L'Ormiere and one at Les Saules. The erection, guarding and maintenance of these watering places necessitated the moving of a large portion of the corps with the entailing provision of supplies. After all the overseas troops had gone, these watering places were dismantled and the material returned to engineers' stores.

The last piece of work accomplished was the taking apart and storing of the pontoon bridge built by the divisional engineers across the Jacques Cartier River.

The corps arrived back in Kingston on the 8th of October and were at once formed into a Depot Company, and recruiting was carried on for the Second Overseas Contingent, with such success that eighty-five officers and men left on the 4th of January to join the Engineers of the Second Canadian Expeditionary Force at Ottawa.

A statement was made at the beginning of this article that until the departure of this Second Contingent the corps was composed solely of graduates and undergraduates of the School of Mining. With the Second Contingent went some twelve men from Arts, Divinity and Medicine, who, anxious to answer the call at once, enlisted their services with the engineers.

Queen's University was, therefore, unique in that at the time Valcartier Camp was formed, she had an Engineering

Corps available, in that this engineering corps was called to do service at Valcartier, that from this corps went men with the First Canadian Expeditionary Force, men not recruited just before mobilization at Valcartier, but men who were bona fide members of the corps, in that on its return to Kingston steps were immediately taken for a Second Contingent, and that the great majority of those who went with the Second Contingent were original members of the 5th Field Company.

There was nothing exceptional in the work performed by the 5th Company at Valcartier. It might have been done by any other engineering corps, but the fact that the corps is composed of men trained and educated by profession along engineering lines, gives it a distinct advantage. The members sacrificed much in giving up profitable positions to answer the call, but they did so willingly for the sake of service and with the view of enlisting in the Second Overseas Force.

Below is given a list of those Queen's men who went with the First and Second Contingents.

FIRST CONTINGENT.

Major Alex. Macphail; Sgt. H. B. Free, Sgt. J. P. Harvey, Sgt. W. C. Buchanan; 1st Corp. D. M. Jemmett, 2nd Corp. J. D. O'Connor, 2nd Corp. D. G. Spiers, 2nd Corp. H. S. Baker; L.-Corp. H. T. Eaton, L.-Corp. J. H. Serson, L.-Corp. A. Bolton; Sappers, C. B. Bate, E. H. Birkett, W. J. Dougherty, H. C. Garner, H. Harris, H. R. Haryett, O. A. Hicks, H. O. Kerr, R. A. Kane, E. MacDougall, J. B. MacPhail, H. S. Marlatt, J. L. May, A. Myllimaki, R. C. Ralph, A. Shea, H. S. Sharman, E. G. Sirvage, L. G. Smith, H. B. Tett, P. Boyle.

SECOND CONTINGENT.

Capt. L. Malcolm; Lts. D. S. Ellis, W. E. Manhard, E. A. Baker, P. Earnshaw, C.Q.M.S. F. X. Ahern, Sgt. K. P. McPherson, Corp. D. F. Dewar, W. S. Laing, N. G. Stewart, J. A. Fournier, J. C. Bonham, L.-Corp. R. L. Dunsmore, J. W. D. Farrell, M. M. Acton; Sappers, A. Craig, J. E. Forbes, T. V. Lord, P. M. Macdonnell, J. S. McDonnell, J. R. Miller, F. L. MacCallum, G. B. Patterson, C. A. Poynton, A. Pope, W. J. Stewart, A. A. Webster, J. L. Youngs, D. J. Emery, C. A. Girdler, E. S. Smyth, C. B. Huyck, W. P. R. Holdcroft, A. C.

Malloch, W. C. Rogers, R. F. Clark, E. M. Medlen, W. S. Earle, R. M. Calvin, J. D. Calvin, C. C. Scott, J. Madden, J. H. Stitt, W. J. McIntyre, R. L. Germain, W. H. Ellis, A. Mowat, E. D. Sliter, D. A. Sutherland, J. P. Marsh, E. F. Browne, F. G. Quigley, O. G. Alyea, L. R. Calder, H. S. Minnes, M. Fredea, F. G. Daly, K. I. Murray, H. S. Nicholson, J. L. McQuay, H. P. Jarvis, G. Clarke, N. McCartney, W. B. Donoghue.

A GRADUATE.

TO MATTHEW ARNOLD.

Unconscious Christian thou, how seldom we,
Among the many who have taught our race
What conduct is, what manhood's choicest grace,
Find one in winsomeness surpassing thee;
We catch a pure gleam of sincerity
Through shadows deep that lie upon thy face;
And in thy mental movements we can trace
One freed from fetters of formality.

The scentful flowers, perfuming all the air;
The human breast that heaves; the eyes that shine,
(To none of which the works of Art compare)
Show form to be earth-born, but life, divine;
Refreshing as the breeze to burning brow,
Or rain to thirsty fields—even such art thou!

ALEXANDER LOUIS FRASER.

The Manse, Smith's Falls, Ont.

THE ORIGIN AND HISTORY OF THE HEBREW LANGUAGE.

EXCEPT in some of the larger universities where Semitic Languages and Literature occupy a more or less prominent place in the curriculum, the study of Hebrew plays a small and inconspicuous part among the many subjects in which our age is interested. It is quite off the well-worn track along which modern education moves. Because of the fact that the Old Testament comprises practically the whole ancient Hebrew literature and of the further fact that the Old Testament is regarded, whether wisely or not, as belonging exclusively to the field of Theology, it has followed that Hebrew, too, has been looked upon as solely a theological subject. It is, of course, true that very few other than theological students ever dream of studying Hebrew. One result is that popularly only the haziest knowledge is current regarding the nature and history of this noble language in which we have preserved one of the richest literatures of the world. Many otherwise well-informed people, if they were questioned, might not care to go beyond the safe answer that "Hebrew is a very old language that has something to do with the Bible." Not only so, but even among those interested in the study of theology and of the Bible there is to-day a sharp difference of opinion regarding the value of the study of Hebrew, as compared with a rich, tropical up-growth of new, so-called *practical* subjects, to which quite properly the Church and her ministers are devoting careful attention in these eminently practical days. Few would maintain that one could be in any sense a student of Æschylus or of Homer without a knowledge of Greek, but the inconsistent stand is taken by some that Hebrew is no longer prerequisite for those who would be students, if not specialists, in the wide field of Old Testament literature. It has been said that Hebrew at best is a purely technical subject for theological students to dabble in, and that even they would be very little the losers if they studied the Old Testament in the English versions alone with the aid of the purely English books that keep pouring from the press. Others are old-fashioned enough to believe that this minimizing of the value of the study of

Hebrew is a mistake and that the movement to take it off the curriculum of theological studies is a serious retrograde step and a pandering to a kind of superficiality that is a real danger in this too utilitarian age. In the meantime the Old Testament continues to be merely a textbook for the teachings of the Church and a hunting-ground for texts of sermons that too often have little or no bearing upon the books from which they are chosen. It is tempting to go on and to attempt to demonstrate that the Old Testament is, or ought to be, far more than this; that from a purely literary point of view it deserves more attention than it usually receives; and that because of a multitude of interesting and difficult, but imperative critical problems the study of this great library of literature in its original language is absolutely necessary to its proper understanding and interpretation, especially on the part of those who profess in some measure to be its exponents as preachers of the rich and varied Word of God. One would like also to make a plea for more purely expository preaching from the men in the Church's pulpits, in the hope that thereby the Bible might be helped to win back the confidence and affection of the people, which, we may all deplore, it seems to have so largely lost. 'Assuredly there can be no re-establishment of that confidence as long as preachers deliberately shirk facing the problems surrounding both the Old and the New Testaments, of which many who occupy the pew are quite aware. But this has already taken us too far afield from the subject that stands above. A brief study of the origin and history of the Hebrew language may be of some value in relation to that wider purpose at which we have hinted, and at least should be of some general interest and instruction.

It will be necessary in the first place to preface our inquiry with a discussion of the much wider problem—the origin of the Hebrew people themselves. History, rewritten in the light of archaeology, ethnology, and comparative philology, has enabled us to gain a fairly clear view of the beginnings and relationships of the Hebrews. Not so long ago there could have been but one answer to this question and it was to be found in the historical record preserved in the Book of Genesis; any attempt to go behind that record, let alone to doubt its absolute finality, was a forbidden exercise of man's thinking. But this has quite changed; we may now rejoice that that battle for the

freedom of human thought and speech has been fought and won. To-day it will be at least conceded that the historical sketch preserved in the opening chapters of Genesis is not history in the same sense as that in which modern historians treat their subject. There is no need, however, of rushing to the other extreme of denying that the Old Testament has anything of historical value to offer on the important subject of the beginnings of the Hebrew people. The recollections or traditions of the Hebrews regarding this earliest period, even if they are not scientific history, do at least contain historical materials of the highest importance. Modern historians would not attempt to carry their investigations back so far; they would probably be content to hand over the account of the Creation to the scientist, and the story of the Fall to the philosopher. Nor will the Tower of Babel story serve as a sober historical explanation of the diversities of language and race. But the genealogical lists of the descendants of Noah, the so-called Table of the Nations in Genesis X, do constitute an historical source which no study of this problem can afford to overlook. Whatever may have been the facts regarding the Flood and its survivors, these two closing chapters of "the primitive history" (Genesis I—XI) have quite properly received careful attention from modern investigators.

According to the current critical view this first section of Genesis contains two cycles of stories or traditions cleverly woven together by a later editor. In Chapter X from the older of these two sources we read about Cush and Nimrod and his wide dominion in the east (vv. 8-19); but the actual genealogy of the three sons of Noah belongs for the most part to the later thread. We are told that the descendants of the oldest of Noah's sons, Shem (from whose name of course we have the word Semite and its adjective Semitic), were five: Elam, Asshur, Arpachshad, Lud, and Aram. In such early genealogical lists, not only among the Semitic peoples, but among non-Semitic peoples also (for example Hellen, the eponymous forefather of the Hellenes or Greeks, who had three sons, Dorus, Æolus, and Xuthus), what is represented as the relationship of father and son is usually to be understood as their way of explaining the relationships existing between tribes and peoples and nations. Thus of these five sons of Shem we readily recognize the Assyrians (Asshur) and the Aramaeans (Aram),

two important members of the Semitic family of peoples. Elam we know historically only as a non-Semitic people who occupied the great plain east of the lower Tigris and north of the Persian Gulf. It became a part of the Persian Empire of Cyrus at an important period of Old Testament history. There is, however, some slight archaeological evidence which may point to an earlier Semitic civilization underlying that of the historic Elam, though it may be fairly doubted whether the Hebrew tradition, which, as we have it, is late, can possibly have had any recollection of so remote a period. The identification of Lud with Lydia is difficult, for this people lay almost entirely outside the geographical circle of the early Semites, and was, like Elam, non-Semitic. If Lydia is meant the only explanation that can be advanced is that both Lydia and Elam are included, not on ethnological grounds, but because at the time when the tradition arose these two peoples were tributary to Assyria. Arpachshad is probably to be taken as referring to the Chaldeans or Babylonians, although the present Hebrew form of the name is doubtful and may be a mistaken combination of two separate names. Both the earlier (X: 24-30) and the later source (XI: 10-27) agree that the Hebrews, of whom Eber is the eponymous forefather (according to a popular etymology "Hebrew" is simply "Eber-ite"), are descendants of Arpachshad and in the direct line of descent from Eber are Terah, Abram, Nahor, and Haran. When it is further stated in XI: 31 that Terah with his son Abram and his grandson Lot "went forth from Ur of the Chaldees, to go to the land of Canaan," we have probably the same tradition as that of the genealogy if the identification of Arpachshad with the Chaldeans is correct. It is important to notice that the two sources disagree in one important respect: according to the older the various South Arabian tribes (the sons of Joktan, X: 26-30) were likewise descendants of Arpachshad through the line of Eber, i.e. these South Arabians together with the northern Aramaean peoples (represented by Peleg, v. 25) were of the same stock as the original Hebrews. But the later source denies the Semitic origin of the Arabs of the south altogether and represents them as belonging to the family of Ham (vv. 6-7). Even more surprising is the fact that according to this later genealogy Canaan is likewise represented as a son of Ham along with the Egyptians (Mizraim) and the Ethiopians

(Cush,—cf. X: 6), whereas we have indisputable historical and linguistic evidence that both the Canaanites and Ethiopians were of Semitic stock. These difficulties are usually explained away by saying that this genealogical table is based on geographical and political lines rather than upon purely ethnological ones. But, just at this point, it is necessary to notice that in recent years there has been much discussion regarding the relationship of the Semitic and Hamitic families of peoples. Professor Barton (*A Sketch of Semitic Origins*, Chap. I) presents a careful summary of this discussion and on linguistic and ethnological grounds concludes that “the general unity of the Hamito-Semitic stock is not seriously questioned,” and decides in favor of North Africa as the original home of this double race. But it is precarious to jump to the conclusion that here we have another striking “confirmation” of the historicity of the Genesis traditions. Such a theory of the original unity of these two races presupposes thousands of years to account for the subsequent differentiation. This leads us back to a period of which Semitic tradition cannot possibly have had any recollection or knowledge. The Genesis account, therefore, combines some accurate information regarding the earliest relationships of the Hebrew people with other statements which, on ethnological grounds, we know to be quite erroneous, though easily explainable from historical facts. Even so, the early traditions unanimously declare that the Hebrew people, or rather at first a loosely related group of tribes who came to be known as the Israelites, emigrated to their Promised Land in Palestine from the border of the rich land of Mesopotamia. Terah with his son Abram and Lot, his son’s son, began their journey from Ur of Chaldees (which seems to have been clearly identified as lying west of the Euphrates, nor far north of the head of the Persian Gulf and south-east of Babylon) but went no further than Haran (in the extreme north of Mesopotamia not far from the important city of Edessa), where he died. A little later Abram was called upon to lead the expedition from Haran into Canaan, leaving behind him his brother Nahor.

What has modern historical investigation to say to this? Substantially the Hebrew tradition, or at least the real history lying behind the somewhat naïve stories of Genesis, has been established as correct. The earliest history of Palestine seems to have been one of successive immigrations of Semitic peoples.

"From time immemorial wave upon wave of Semites had overrun Palestine, and had by fusion with its aboriginal inhabitants, whatever they were, gradually formed the Phoenician or Canaanitish peoples" (Barton: *op. cit.*, p. 270f.). On the evidence of early Babylonian literature we know that about 4000 B.C. "many successive expeditions of conquest and migration from Babylonia had also swept over the land" (p. 271). The finding of the famous Tel-el-Amarna letters, the correspondence of one of the Egyptian rulers written in cuneiform, has confirmed this fact of the wide extent of the Babylonian language and culture and has further proven the presence of a number of Aramaean tribes in Palestine about 1400 B.C. These were nomads who had journeyed south-westward from the highlands between Mesopotamia and the Sea on the track of their Babylonian predecessors. The Israelite tribes and the closely related Moabites and Ammonites are believed to have been among these Aramaean invaders. This finds confirmation in the fact that Hebrew tradition persistently connects the ancestry of the Israelites, particularly of Jacob, with Aram (cf. Gen. XXVIII: 2, where Jacob is bidden to go to "Padan-aram, to the house of Bethuel thy mother's father"; and Deut. XXVI: 5 where the reference is to Jacob as a Syrian, i.e. an Aramaean). The tradition of the patriarchal stories, which so far at least are historical, is quite clear that the Israelites were in the first instance nomads. It is quite true that, thanks largely to the labours of archaeologists, we possess a very clear picture of a high degree of civilization that flourished in Babylonia long before the date of the departure of the Israelite tribes. We know too that in Canaan a comparatively advanced stage of culture had been reached before that date. Conservative scholars, who do not wish to concede that the Israelites owe anything to the Canaanites, object to describing the forefathers of the Chosen People as "a semi-barbarous nomadic race." This is just the crux of the sharp difference of opinion between the defenders of the modern critical view of this early history and their opponents. But there should be no desire to exalt the civilization of the Babylonians and Canaanites and, to make the contrast the greater, to degrade that of the Israelites to the level of "barbarism." (See Hommel: *The Ancient Hebrew Tradition as Illustrated by the Monuments*, p.12f.). It is a perversion of the critical view to force such a contrast. No one

wishes to make out that the Israelites were barbarians. They doubtless shared in some measure the culture of their home in the East—just so much of it, in fact, as was portable and useful during their long journey from the east to their new home in the west. They entered Canaan as nomads and during the long “Conquest” they lived among and beside their “heathen” neighbors and, of course, borrowed from them a great deal of their later civilization. The glory of the Hebrew people is that all these diverse elements were assimilated and made their own, so that no race of antiquity, except perhaps the Greeks, have left so clear an impress of their individuality on their religion, literature, and every phase of their national life. Thus, if our account is correct, about 1500 B.C. a few closely related tribes of Aramaean stock, the later Israelites, made their way from the borders of the rich land of Mesopotamia, where they had been living a simple half-pastoral, half-agricultural life, across the wide desert following the northern mountain ranges to Palestine. There for the next three or four centuries they were engaged in a life or death struggle with the Canaanites and other inhabitants of the land for an established home in the new country, and to keep their religion and national identity from being swept away in what they soon came to regard as the “heathenism” that surrounded them. This introductory discussion may seem to be disproportionately long, but it has seemed necessary to reach a definite conclusion before we could proceed with our proper subject. At what period, then, and whence did these Semitic tribes from the farther east learn to speak and to write the language which we know as Hebrew?

From what has been said of the early history of the people themselves it will be abundantly clear that to speak of Hebrew as “the primitive language of mankind” is to forget that the nation that spoke it appeared late rather than early upon the great stage of world-history. Centuries before the earliest date that can be assigned to the Israelite emigration from Mesopotamia great empires, each with its own language and literature had flourished in Egypt, Babylon, and in the farther east, and in the coasts and islands of what we know as Greece. The earliest inscriptions on gems and pottery which have been discovered in the ruins of the early Ægean civilization in Crete and at Mycenae scholars have not yet been able to read; it seems

quite certain that it is not Hebrew, nor Semitic. The fascinating story of the discovery and decipherment of the cuneiform literature preserved on the hard-baked bricks from the libraries of Babylon is known to many. And every frequenter of museums knows something of the quaint, stiff figures of birds and beasts and other pictures of the hieroglyphs of Egypt. These languages were old and had begun to pass away before Hebrew was born.

To begin then at the very beginning of what is known about the Hebrew language it will be seen how important it is that our preliminary sketch of the origin of the people themselves be correct. It has been concluded that the Israelites, the forefathers of the Hebrew nation, were Aramaean tribes who came from the East to the borders of, and into, Palestine. That means that they spoke an early dialect of Aramaic when they reached their new home. Just here mention must be made of another theory, that of Hommel, an archaeologist and philologist, whose work, unfortunately, has been marred by an unreasonable, and often bitter antipathy to the Higher Criticism. He holds, first of all, that about 2000 B.C. "an Arabian dynasty had managed to establish itself in Northern Babylonia," and that "these aliens soon learnt to assimilate themselves completely with the Babylonians, and from their ranks sprang a king who was destined to go down to posterity as the greatest ruler ever known in Babylon, Khammurabi" (*op. cit.*, p. 41). In the second place, in regard to the Aramaean race, from which we have concluded that the Israelite tribes were descended, he states that "the earliest Aramaeans mentioned in the inscriptions were a purely nomadic race whose personal names present characteristics exactly similar to those found in Arabian nomenclature. It is, therefore, fairly safe to conclude that at that time (*i.e.* in the second millennium B.C. . . .) they formed an integral part of the great Arabian people" (p. 205). And 'in regard to their language, it was undoubtedly, in Jacob's time, merely a dialect of Arabic. What we now call Aramaic did not come into existence till a much later date" (p. 204). Hommel's argument is based very largely upon the proper names of the inscriptions, especially from the cuneiform, a region in which the Assyriologists themselves differ quite sharply, and hence his theory is to be looked upon with some suspicion. However, for our present purposes it is not

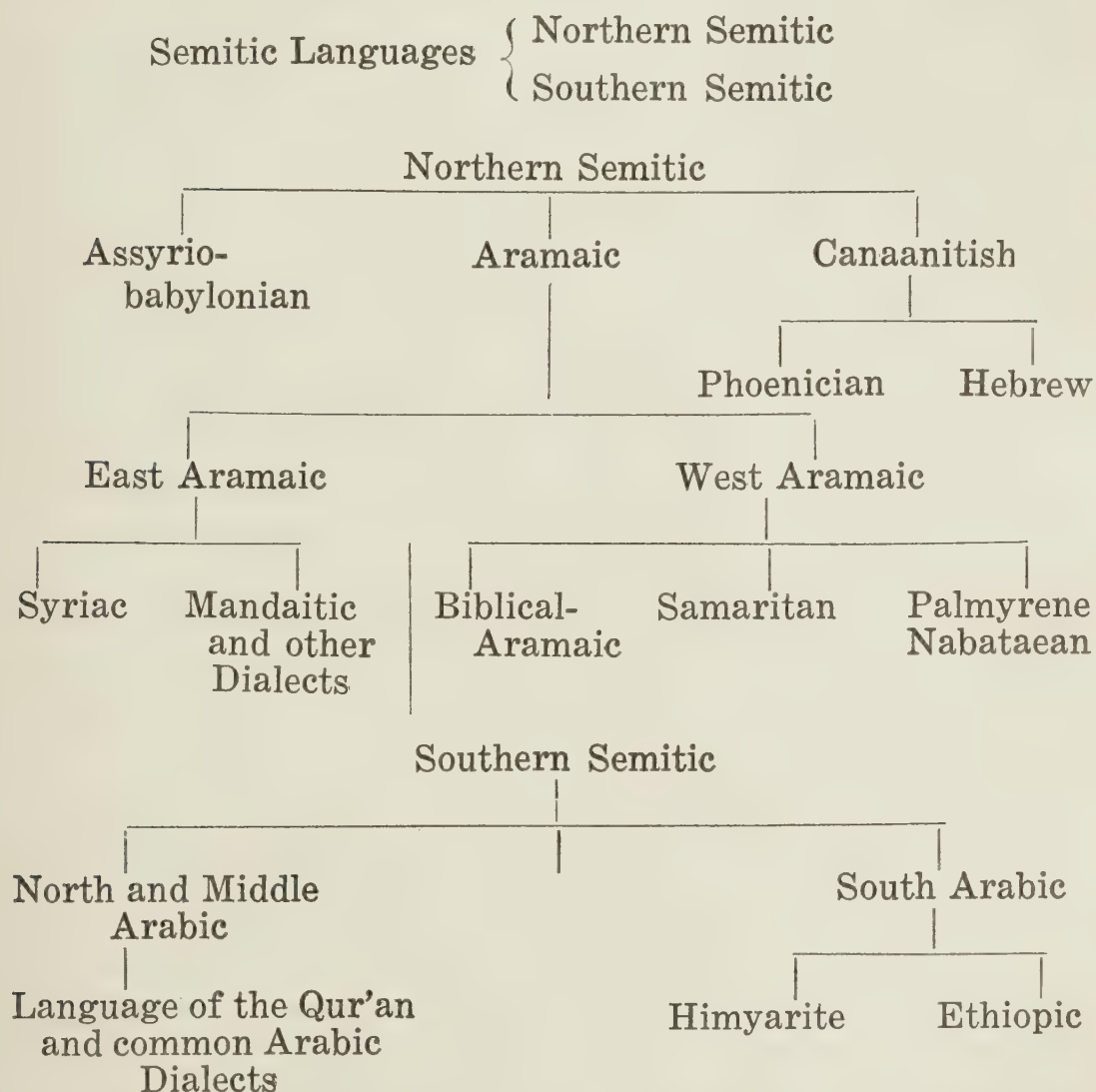
necessary to decide between the two theories (after all it is largely a matter of nomenclature), whether the early Israelites were Aramaeans and Aramaic-speaking or whether they were really Arabs, speaking a dialect of Southern Arabic. Both are agreed that when these emigrants from the east reached Palestine they did not bring the Hebrew language with them.

The solution of the problem is afforded by a careful comparison of Hebrew with Canaanitish and Phoenician, which makes it quite clear that these languages are essentially identical. Hommel supposes (p. 229) that the Hebrews "after the time of Joshua" (the date seems unnecessarily late) "exchanged their Arabic idiom for the kindred language of Canaan." Professor Margoliouth (*Hastings' D. B. III.*, p. 25b) says: "The Hebrew language may be appropriately termed the Israelitish dialect of Canaanitish," which "is closely allied to the Arabic," so that "the relation of Hebrew to Arabic is that of daughter to mother." Hommel, of course, holds that the close affinities of Hebrew to Arabic are not through the Canaanitish but through the original Arabic dialect which the Israelites themselves spoke when they entered Palestine, and whose idiom was largely preserved. Margoliouth's argument in proof of the close affinity between Canaanitish and Arabic has been criticized by later writers, who regard the comparison of the relationship between Arabic and Hebrew as that of mother to daughter as an overstatement of the fact. Perhaps it would be safer to say that Arabic bears to Hebrew the relation of an elder brother. This general conclusion is agreed to by Professor Theodore Nöldeke (*Art. Semitic Languages in the Encycl. Britannica*), who says that "Hebrew and Phoenician are but dialects of one and the same language." A third element in the Hebrew language, the importance of which is being more and more recognized, is the Assyrio-babylonian. Professor Delitzsch protests that "the value of Arabic for Hebrew lexicography has been greatly exaggerated" (*The Hebrew Language viewed in the Light of Assyrian Research*, p. 5), and predicts that "it will be seen that Assyriology is actually inaugurating a new era of Hebrew lexicography" (p. 10). It will be gladly conceded that Assyrio-babylonian has contributed very greatly to a more thorough knowledge of Hebrew. This means, of course, that at some period there had been close contact between Hebrew and Assyrio-babylonian, though whether that

element was brought with the Israelites in their original language (whether Arabic or Aramaic) and preserved when they adopted the Canaanitish language, or whether this Assyrio-babylonian element came into Hebrew along with the Canaanitish it is impossible to decide. We know at least that Canaan had been under the influence of the Babylonian language and culture for a long time prior to the coming of the Israelites, so that doubtless the Canaanitish language had inherited an important Assyrio-babylonian element. Hebrew, then, is a language taken over for the most part by the Israelites from the Phoenicio-Canaanite peoples of Palestine, though preserving evidences, particularly in grammar and syntax, of a close relationship to Arabic, and, in lexicography, of an early close association with Assyrio-babylonian. The most important evidence in the establishment of this conclusion is the famous "Moabite Stone," an inscription celebrating the victories of Mesha, king of Moab, about 850 B.C., which is, so far as can be determined from its written form, to all intents and purposes a "Hebrew" inscription. Certain glosses in the Tel-el-Amarna letters (ca. 1400 B.C.) preserve Canaanitish words and phrases, which also are very closely related to Hebrew. The consensus of opinion favours this same view of a considerable body of Phoenician inscriptions from various periods and sources (it will be remembered that the Phoenicians were the sea-farers and colonizers of the Semitic family), though the dissentient opinion of so eminent a Semitic scholar as the late Professor W. Robertson Smith (*Encyclopædia Biblica*) deserves to be noted. He says: "An exacter study of the Phoenician inscriptions, however, shows differences from Hebrew which suffice to constitute a distinct dialect, and combine with other considerations to favour the view that the descendants of Abraham brought their Hebrew idiom with them," and further, "As the origin of Hebrew is lost in the obscurity that hangs over the early movements of the Semitic tribes, so we know very little of the changes which the language underwent in Canaan." It may be nothing more than an interesting coincidence that in Isaiah XIX: 18 Hebrew is called "the language of Canaan." In II Kings XVIII: 26 it is called "Jewish," while the designation of the language as "Hebrew" is not found in the Old Testament at all, and first, through the Aramaic, in the Greek prologue of the Book of

Ecclesiasticus (the Book of the Wisdom of Jesus ben Sirach) about 130 B.C.

At this point it may be useful to consider the following Table of the Semitic Languages which is taken from Marti: *Kurzgefasste Grammatik der biblisch-aramäischen Sprache*. It is based on geographical rather than historical lines and for that reason obscures the close relationship which, as we have seen, subsists between Hebrew and Arabic.



The discussion of this whole complex problem is rendered specially difficult by the fact that the Semitic alphabet consists solely of consonants. This means that all Semitic literature and inscriptions (except the Assyrio-babylonian which is written in the cuneiform, a non-alphabetic, phonetic system of writing which they took over from the non-Semitic Sumerians)

are preserved for us in an unvocalized form. For us, who regard the vowels as quite as essential a part of our alphabet as the consonants, it is very difficult to understand how any system of writing could get along without vowels. But the vocalization of the Hebrew scriptures we owe to a body of scholars known as the Massoretes whose work dates somewhere between 600 and 1000 A.D. It is true that certain weak consonants of the alphabet, including the equivalents of our own weak 'h', 'w', and 'y', were used as *vowel letters*, to indicate the presence of certain long vowels only, but so rudimentary a system of vocalization, never consistently used, does not help us very much toward establishing the original pronunciation of any of the Semitic languages. After an interval of from a thousand to two thousand years we have no assurance that the traditional pronunciation (the Massorah), preserved for us by the Massoretes, in the case of the Old Testament, is anything more than an approximation towards the original and real pronunciation of Hebrew. This is particularly true because these scholars had in mind almost exclusively the reading of their sacred scriptures in the synagogue, which was an intonation rather than a natural reading. At least it will be clear that all the slight dialectical differences and evidences of the growth and development which must have been apparent in the living language have been levelled down to fit in with the exigencies of the Massoretic system. There are still some faint traces of dialectic difference in grammar, vocabulary, and pronunciation. The well-known story in Judges XII tells us that the Ephraimites were detected by the Gileadites by the simple device of requiring them to say "Shibboleth," for which they could only say "Sibboleth." Nehemiah XIII: 24 preserves evidence that at that late date there was a marked difference in pronunciation between the Hebrews and the inhabitants of the Phoenician city of Ashdod, although, as we have seen, Hebrew and Phoenician were originally very closely akin. The accident that the Assyrio-babylonians adopted the phonetic cuneiform system of writing is affording us some valuable evidence now as to what the pronunciation of early Semitic must have been. But the gap between the written language and the spoken language in the case of Hebrew and the other early Semitic languages and dialects is one that can never be bridged.

Probably the earliest piece of Hebrew literature preserved for us is the "Song of Deborah" in Judges V, the date of which is about 1250 B.C., though we cannot be sure that the *written* form of this poem is nearly so old. "The Fable of Jotham" in Judges IX seems to be almost as early; and a century or so later belong "David's Lament over Saul and Jonathan" (II Sam. I: 17f.) and "Nathan's Parable" in II Samuel XII: 1-4. The earliest strand of the Pentateuch and of the Historical Books was written in the early years of the monarchy (about 900-850 B.C.) and from that period on there was an era of remarkable literary activity culminating in the works of the great prophets of the Assyrian period. The pre-Exilic age marks the high-water mark in the development of the Hebrew language; this is the age of classic Hebrew. The history of the language during those five hundred years is one of unification of all dialectic differences and of all its constituent elements into the Hebrew which we know to-day. Purity and simplicity are the most noteworthy characteristics of Hebrew at its best. As compared with our modern languages it is small in vocabulary and range of ideas and remarkably free from foreign admixture. The preponderance of words expressing concrete ideas, the simplicity of its grammar and syntax, have made Hebrew strikingly adapted to the narration of those wonderful stories which are the charm and glory of Hebrew literature. The terseness, the dignity, the peculiarly oriental picturesqueness, the consummate artistic skill of, for example, the patriarchal stories in Genesis, and of the historical narratives of the Judges and of Saul and David as told in the Books of Samuel and Kings have never been excelled, if indeed equalled, in any other language. They form a sort of prose epic worthy of a place beside the sublime poetry of Homer and alone would have given Hebrew literature an imperishable fame among the great literatures of the world. As a vehicle of poetical expression, save in the case of some of the earlier, descriptive poems, or for the expression of philosophic and theological thought the Hebrew language has ever been so well suited, although in the hands of the great prophets, and of the author of the Book of Job and of some of the Psalms Hebrew poetry has won for itself no inconsiderable place of honour in the realm of literature.

The Babylonian Exile marks a turning-point in the history of the Hebrew language. Those years of bitter disappointment when the captives sat in sadness and tears beside the rivers of Babylon threatened at first to crush the spirit of the exiled nation as they had crushed their dreams of national greatness. But their religion and the consciousness of their high calling in God's great plan of history set them to work to lay broad and deep the foundations of an enduring place among the nations of the world. Their hopes revived, they turned back, naturally, to the literary products of the preceding centuries. The Exile became a second great literary epoch. The stories of the small beginnings of their national life and of their early history as a nation were reverently collected and edited. Fortunately for later ages they did not rewrite what had been already written; they were conscious that this was a treasure that must be marred as little as possible and so they embedded it in an historical framework of their own. Already they were dimly conscious that men had been led of God to write these noble records of the life of Israel. Thus where two accounts of the same event were found they preserved both, sometimes setting them side by side or again weaving them together in a more intimate fashion. They felt no difficulty because the two accounts were not absolutely harmonious in all their details. Similarly the sermons of the great prophets were gathered and made into a collection under a single superscription—their simple theories of bookmaking being satisfied with an often uncritical and more or less haphazard method of putting together what had been preserved.

In Babylon the official language at this period was what is known as Chaldean, the language of the New-Babylonian Dynasty which had arisen shortly before the Exile; but the common people of Babylonia, among whom the Hebrew colonists were settled, spoke Aramaic. It is, then, not surprising that, beginning with the Exile, we find increasing traces of Aramaic influence. In addition to this there is a marked decline in the artistic quality of post-Exilic literature, particularly of historical writing. The style of the annalist and chronicler takes the place of the free, spontaneous originality of the earlier writers, so that on both linguistic and literary grounds it is easy to determine that the Books of Chronicles, along with those of Ezra and Nehemiah, are the products of

a post-classical age. Even the prophets have transferred their attention from the problems of the present life to hopes and dreams of the future; apocalyptic and eschatological unrealities are in marked contrast to the intensely real questions which were the subjects of the sermons of Isaiah and Jeremiah. The collecting of the precepts of homely "wisdom," and the compiling of the hymns and psalms of the post-exilic community are likewise on a somewhat low literary and artistic plane. It would not be right to suggest that everything of literary excellence had perished with the Exile, but it is true that the general level of merit, on literary and linguistic lines, is distinctly lower. The Book of Job stands out like a mountain-peak among a range of lesser hills that often rise only very slightly above the level of the plain.

One interesting fact which shows the extent of the Aramaic influences under which the Hebrews passed at the time of the Exile is the adoption of the present square-letter alphabet which is really of Aramaic origin, although, because of the preponderating importance of Hebrew literature, it soon came to be called the Hebrew alphabet. In the same way in the New Testament the term "Hebrew" is used of the native language of Palestine owing to a popular confusion of Hebrew and Aramaic. The original characters in which Hebrew was first written and which for convenience are called the Israelitic alphabet, were much more angular and primitive in form than the present. They have been preserved for us only on a few inscriptions and coins, notably the Siloam inscription, the oldest extant autotype of Hebrew writing, probably dating about 750 B.C. The values of the characters in both the Israelitic and Aramaic alphabets is, of course, the same. In Babylon the Jews found this Aramaic system of writing in common use and naturally soon adopted it for the purposes of ordinary written intercourse. Possibly also copies of their scriptures, then being edited, were made in the new characters, particularly for the benefit of the second generation of the Exiles. Later, after the Return, when Ezra promulgated the Law the text was written in both the early Israelitic alphabet for the native Jews and in the new square-letter characters for the returned Jews and for those still in Babylon. Still later at the time of the Maccabean revolt, when many of the older manuscripts preserved in the Temple were

destroyed at the order of Antiochus Epiphanes, the new copies made to take their place were made from the texts preserved in Babylon and hence in the square-letter Aramaic characters. Hence by the beginning of the Christian era the new alphabet was in almost exclusive use. (See Ad. Neubauer: *The Introduction of the Square Letters in Biblical MSS.* Studia Biblica, Vol. III).

Side by side with this interesting fact stands the further fact of the steady encroachment of Aramaic as the popular language of Palestine. Many of the returned Jews from Babylon were doubtless bilingual and the people generally found it increasingly useful to be able to speak the language of the Aramaic-speaking peoples who surrounded them on every hand. Indeed as early as the time of Isaiah we learn that official, diplomatic intercourse was conducted in the Aramaic language, it being the natural medium of communication between the east and the west (cf. Isa. XXXVI: 11 = II Kings XVIII: 26). Gradually Aramaic became the ordinary speech of the common people, though Hebrew of course remained to the last the official, ecclesiastical and literary language, or, as they themselves called it, "the holy language." As late as 170 B.C. the Book of the Wisdom of Jesus ben Sirach was written in remarkably pure Hebrew of the classical type. Many of the Jews, particularly among the better educated, continued to be bilingual; indeed during the middle ages and to a slight extent perhaps in our own day learned Jews take pride in conversing in their ancient language. There is interesting proof of the fact that Aramaic was rapidly superseding Hebrew as the popular language of post-exilic Judaism in the presence of considerable portions of the Book of Ezra and of the Book of Daniel in an Aramaic dialect, known as Biblical-Aramaic, slightly different from the common Palestinian dialect. This means that readers were expected to be able to pass readily from one language to another, so that there was no need of translating these sections into Hebrew. The Aramaic sections of the Book of Ezra are probably to be explained as excerpts from some official lists or documents preserved in that language. In the case of the Book of Daniel, which belongs to the early Maccabean period, the introduction of the Aramaic section abruptly in the middle of a verse (II: 4b) remains an unsolved problem. One

theory is that a portion of the original Hebrew text was lost and was replaced by the corresponding section from an Aramaic version; or possibly the Book was originally written in Aramaic and the introductory and closing chapters were translated into Hebrew to procure for the book a place in the Hebrew Canon; still another theory, which is difficult to resist, is that the author thought he was actually reproducing the language of the royal court of Babylon, which, however, as we now know was not Aramaic but Chaldean, two quite distinct languages. The error was perpetuated up to our own day in the name Chaldee which was given to the language of these Aramaic chapters. By the beginning of the Christian era, probably considerably earlier, Aramaic had become almost entirely the popular language. Jesus and his companions spoke Aramaic, although He was indeed a student of the Hebrew scriptures. Hebrew, from that time on, became more and more the language of the synagogue, although paraphrases of the sacred books were written in Aramaic for the instruction of the people (the Targums). Indeed the ancient Hebrew language soon ceased to be adequate for the purposes of ordinary intercourse.

The next stage in the history of the Hebrew language is closely parallel to what happened in the case of Latin. Corresponding to scholastic Latin we have the Rabbinic Hebrew of the Mishna and of the religious schools which had become more and more prominent in the post-exilic community and were especially so after the Fall of Jerusalem in A.D. 70. The Mishna is a collection of rabbinic interpretations and expositions of the sacred Law, which had become a part of the legal, priestly tradition of the later Judaism but do not seem to have been collected and put into writing until about 200 A.D. These interpretations are in Hebrew but to meet the needs of the new conditions and wider usage many Aramaic words had been taken over to enlarge the vocabulary of the classical Hebrew and to make these expositions intelligible to the people for whom they were written. The Mishna and a further commentary on it, the Gemara, together constitute the Talmud, which we have in two versions, the Babylonian and the Palestinian. The Targums, as mentioned above, were Aramaic paraphrases of almost the whole of the Old Testament composed in Palestine in the late post-exilic period.

Lastly we have a still later survival of the Hebrew language, known usually as New Hebrew. About the tenth century A.D., the age of the Massoretes who invented a system of vowel signs and accents to add to the consonantal text of the Old Testament, there was a revival of Hebrew literature and learning. From that day down to the present time the Jews have produced an enormous mass of writings on every imaginable subject in the Hebrew language. Treatises on surgery and astronomy in Hebrew of course required a very large addition to the narrow range of the ancient Hebrew vocabulary, where possible these new words were added from the Aramaic. Much of this literature was purely imitation of ancient classical models in Hebrew remarkably pure and accurate. The names of some of the great Jewish scholars of the Middle Ages have been handed down to fame: Solomon ben Isaac (Rashi), the greatest of the Jewish commentators; Abraham ben Ezra (ibn Ezra), critic and commentator, philosopher, mathematician, and traveller; Maimonides (Moses ben Maimon), the greatest of all mediaeval Jewish scholars—these names are not merely the proud possession of Jewish tradition but of the world of human thought and knowledge. Linguistically New Hebrew is of course quite unimportant, just as mediaeval Latin is; but Jewish scholarship is not to be lightly ignored, either in the Middle Ages nor in our own day, either for its breadth or thoroughness. It may be added that Yiddish, the international medium of intercourse between Jews to-day, is not Hebrew except in form. It is written in Hebrew characters, indeed, but except for a slight foundation of very common Hebrew words, there is little Hebrew in it. It is essentially a polyglot speech and takes on the character of the country in which it is spoken, though German and Polish seem to constitute a large element of its vocabulary.

H. T. WALLACE.

CURRENT EVENTS.

GERMAN-AMERICAN NEWSPAPERS ON THE WAR.

When I was in New York the other day of course I bought some German-American papers to see what they were saying. The last one I had seen was a Sunday edition of the well-known New York *Staatszeitung*, of a date early in September, when the German armies were still sweeping all before them on the road to Paris, and the German soldiers confident of victory were chalking up—so we heard—on the doors of conquered French or Belgian cities, “William the Greatest, Emperor of Europe.” The *Staatszeitung* too was full of joy and confidence in these days and its editor, Mr. Hermann Ridder, was filling its pages with details of the perfect and invincible organization of the German army, its new Krupp artillery and newly invented tactics. The tone of the literary articles was generally jubilant as of a people that felt itself on the eve of a great and splendid manifestation of its power. One article in particular seemed to me to express this spirit so fully and perfectly that I kept a cutting of it. It was a kind of prose ode by Hermann Bahr. Its title, printed in large type, was *The German Nature has appeared to us. (Das Deutsche Wesen ist uns erschienen)*. Here are a few extracts from it:

If I were to live a hundred years I should never forget these days. Nought greater have we ever lived through. We had no idea that such greatness could be the experience of mortals. Only three weeks ago we would have been unable to imagine it. This feeling of having lived through something unspeakable overcomes all of us. Each sees it in the other's face and feels it in the firm pressure of his hand. Speech is needless, each is silently aware of what the other feels. Nothing lives in us but the one thing, the immense thing: the German nature has at last manifested itself.

. . . . That is the unspeakable gift of this great time. Therefore the hearts of all beat so high in this fateful hour. Never have we been so earnest but also never so joyful. In confident joy we all stand together, we who did not really know ourselves. For the German nature has at last manifested itself.

* * * * *

Where was it so long? Where did it hide itself? If we had always been so, as we have now become all at once, the whole world

would have had to bow before us. . . . But a while ago the German soul was sleeping, and now thoroughly refreshed, it is awake, and we can hardly credit what our previous state was. Only three weeks ago when each saw only his difference from the other, his individual and selfish interests, when each lived a separate life, when we were parties but not one people. . . . Blessed be this war which in a day freed us from all our ancient evils.

There was a war-lyric also, I remember, by Sudermann the dramatist, which bade scornful defiance to the treacherous Frenchman and the "pock-marked swarms of the Russian steppes," and promised that for a hundred years East and West should tremble as they told of the mighty strokes with which the German defended himself. For Sudermann, like all good Germans, clung desperately to the idea that this war was a defensive one on their part. With all his new audacious Junker-Nietzsche realism, the German dare not allow himself to question that idea even in his heart. Here and there a reckless Max Harden may proclaim to the world: "we willed it, we have willed it from the first," but perhaps it is no fairer to take Max Harden's admissions as testimony against Germans than it would be to take George Bernard Shaw's against Britons. They say "we" with great satisfaction when they mean to stab their country in a tender part, but their hearts are always with Ishmael and the children of the desert.

In these early days of the war there was not so much said about Britain in the *Staatszeitung*. The British army was held to be almost a negligible quantity, and Teutonic humour showed itself mainly in comic pictures of the "degenerate" Frenchman and the "barbarous" Russian with the knout in his hand. When Belgium was mentioned it was to point out that French military aviators by flying over Belgium had been the first to violate its neutrality and thus occasion or justify the German invasion of that unhappy country. The *Staatszeitung* was emphatic about these aviators.

There is a change, a great change now in the tone and subject-matter of the *Staatszeitung* and the German-American newspapers in general. The bellicose tone is still maintained but it is sullenly defiant rather than exultant. Though the watchword is "no humiliating peace," there are occasional quite un-Bernhardi-like phrases about the horror of war; *dieses tragische Völkermorden*, (this tragic slaughter of peo-

ples) and the like. But to read Mr. Ridder now, one would no longer conclude that it was Russia that brought on this war. The *Staatszeitung* is silent now on that once much worked theme of the inevitable conflict between the cultured Teuton and the barbarous Slav and the choice the civilized world had to make between the two. All that is changed now. The culprit, the criminal now is England. England manufactured this war. England it appears must have been clever enough to create the Balkan quarrel and set the great Powers going at each other before she even consented, in spite of earnest appeals from both Russia and France, to enter into the war herself. That was a remarkable feat on the part of British diplomacy outdoing all we ever heard of Bismarck and Talleyrand, were they rolled into one. Not only that, but it was England also, we learn from the *Staatszeitung*, that devastated Belgium. With his own pen Mr. Ridder writes it and in an article written in English: "It was England, and the world is coming rapidly to see that it was England that ravished Belgium" (*Staatszeitung*, Dec. 29th, 1914). Chancellor Bethmann-Hollweg must be sorry he spoke so soon, that he was in such haste to plead guilty before honest Hermann came to the rescue.*

The column of news items in the *Staatszeitung* is one long series of suggestions and insinuations against Britain: "Who is there that does not see now that the English are ready to set the world in flames to maintain their command of commerce" (*Handelstyrannie*)? or, "How long are England's allies to suffer while England is making profit" (*wenn's nur England gut geht*)? or, "In Japan there is a strong party (*ein starkes Element*) that is beginning to comprehend that England is using all the nations of the earth as tools for the furtherance of her interests. But they don't comprehend that yet in the American Congress." The *Staatszeitung* will even prove the hopelessly bad character of the English out of the mouths of their friends—could there be surer testimony than that? And accordingly two quotations are given from DeWitte, the Rus-

*The Chancellor's speech in the Reichstag was based on the military necessity, from the German point of view, of the invasion. "France could wait," he said, "but we could not wait"—he meant till the Russians had got their troops ready for attack in the East.

sian statesman who was persuaded into the Japanese war, and George Bernard Shaw!

And the wonderful letters, generally of rather vague origin, which the *Staatszeitung* receives every day about the English, and the wonderful stories! There is a letter from "an Austrian officer" in a town in far-off Bohemia, where a British soldier ought certainly to be a curiosity, which gives details about the Britisher's use of dum-dum bullets and tells us what they feel there about England: "On the street, in the coffee-house, in society as in the family there is only one speech: 'Gott straff' was Englisch ist.'" (God punish all that is English). "It is said," the officer adds, "that these dum-dum bullets and other munitions of war are furnished by the United States. Is this the way they understand neutrality in America; no law, no human right, no honour? Nothing but hypocrisy! Oh, we shudder at such a country, . . . God give that this terrible slaughter be not prolonged by this American greed of money (*amerikanische Geldgier*)."

That is evidently meant for the American ear, but I should have thought an officer in a Bohemian regiment, and the cafés of Gablonz, had enough mental occupation with the Russians and their doings without troubling themselves about the English.

As for the French, except for an occasional announcement of a French repulse in Alsace, you would hardly know from the *Staatszeitung* that they were in this war. They have become a highly amiable and well disposed people since the last month or so. "Every day brings new signs," says the *Staatszeitung*, "of an understanding, a drawing nearer (*Annäherung*) between the Germans and the French," and the *Staatszeitung* in proof of it prints an affecting story, vouched for by a little newspaper in Kiel, with the heading in large type, *A French Brother-kiss*. It appears that a certain Prussian regiment had been fighting near A—— and had agreed on an armistice with their French opponents in order to collect the wounded. A French corporal came forward on the one side and a German on the other. "Both greeted each other cordially and the French corporal, before the German was aware, gave the latter a brother-kiss (*Bruderkuss*). The Frenchman said they had been forced to fight against us, though they would willingly make peace. Our corporal then informed him that the English were to blame for the whole affair." The truth of this, the

Staatszeitung gravely remarks, is vouched for by the fact that a similar version of the story was published by the *Hoyaer Zeitung*, only that there the hostility of the French to the English appeared still stronger."

Evidently there is a glimmer of hope for Mr. Ridder in the idea that France may desert her allies. But I doubt, Mr. Ridder, you are on a false scent there. Peoples are not to be whisked round in their alliances nowadays in the way that once saved Frederick the Great, and it is unlikely in any case that Frenchmen will be in a hurry to spare you one pang. You would not have spared them. Besides the pleasant ways of your military leaders in dropping bombs on defenceless places and bombarding them are not calculated to propitiate. It looks a little like as if they had set out at first to make this war one of the most ruthless in modern history. It is a German who knows Prussian Junkerdom that says of it: "He who has the idea of really fighting Prussian Junkerdom, but in a humane and considerate way, will get both the scorn and the skaith." *

It is wonderful to read the stories with which Herr Ridder seeks to keep up the spirit of his readers and also to convince them that at any rate the British soldiers are just as bad as anything that has been said of the Germans, just as guilty of atrocities. For example, there is our old friend, the story of the German soldier found with twenty rings on him and a woman's hand covered with diamonds, only this time it is a British soldier and I think he has five hands with diamonds on him, though how a British soldier fighting in an ally's country should come by such goods is not at once apparent.

Sometimes the *Staatszeitung* gets very special news. It has information, for example, by way of Munich, obtained through the "indiscretion" of high officials, that an English army is about to violate the neutrality of Switzerland in order to fall on the flank of the Germans in Alsace. Could anything the Germans have done be worse than that? Some readers, it is true, might have an idea that the British troops had quite enough to do in Belgium without sending their forces to the other side of France. But Hermann has thought of that. It is part of Kitchener's new army, he explains, that is marching

*Friederich Cauer, Ursprung der Deutschen Reichsverfassung.

on Switzerland. The article is headed in large type: *Invasion through Switzerland. The English would pay no attention to neutrality.* There! will those wicked native American dailies stop talking about Belgium after that.

It is known also to all German-American editors that British soldiers are all mercenaries without patriotic sentiment or the idea of a Fatherland. That there should be no doubt about it, the *New Yorker Herald* gives the following story about a Scotch corporal. The Scotch corporal, who has fought in Indian and South African campaigns, is at present a prisoner in a German camp and when questioned by the representative of a certain R. G. C.—whatever that may be—he replied that “all he was after was money, money” (*nur Geld, Geld*). He said “he would just as willingly fight along with the Germans as with those damned Frenchmen, rather more willingly, if he got paid for it. And that is the way all English soldiers feel.”

This is a better story than the *Staatszeitung's* brother-kiss, and I hope they gave that Scotch corporal a bit of ‘baccy.’ That was evidently what he was expecting.

Another task that Herr Ridder has in these strenuous days is to show that everything is “normal” in Germany, especially in Berlin. We know some facts. We know that the Reichstag commission is working hard fixing the price of food-stuffs and raw materials, and what reductions or delays are to be made in the payment of rents, mortgages and mortgage interest. The government has given orders that beer and sausages shall be sold in the restaurants at the usual prices, although it is forbidden any longer to give guests white bread (made of flour and potato), *ad libitum*. The great register-boards of the North German Lloyd and the Hamburg-Amerika lines are a blank and the shipping at Hamburg and Bremen is lying idle at the wharves. Frederick Palmer, who has just done Berlin for *Everybody's Magazine*, reports that the upper floors of his hotel were entirely unoccupied and that the shops though still open were mostly empty, only five customers seen by him on three floors of one of the great department stores; and that the people on the streets and in the cafés were visibly subdued and depressed. “I saw a Germany where you could not turn a street corner without meeting a convalescent wounded man in his stained green uniform, or a woman who was holding back her tears.” So Mr. Palmer writes.

The Germans are a brave and in general a steady-minded people, but they would hardly be human if they were not shaken and convulsed in all their ways and moods at the present time. With their Landsturm on the fighting line months ago and much over a million dead and wounded, it is very unlikely that things should be just as they were before the war. Worst of all is the thought, which will not entirely down, one can see, that they went forth to gather wool and are not unlikely to come home shorn. That is no pleasant thought for a high-minded people, yet I doubt if all the German professors and editors in the world will ever quite succeed in dispelling it.

But according to Mr. Ridder everything is normal in Berlin. A "neutral" gentleman with a very German name, Herr Zimmermann of Rotterdam, writes that business is excellent, the hotels, theatres and cafés are as gay and full as usual, one notices particularly the crowds of young men on the streets, and as for food Herr Zimmermann ate the first white bread he had tasted for some time in Berlin, Holland being now, he says, on "war-bread." That was in mid-November Mr. Ridder says. Possibly both accounts are true, Mr. Palmer's giving perhaps the finer impression, Herr Zimmermann's more the surface one.

The present war will no doubt be largely a struggle of resources and the confidence they give. The Germans no doubt began with the advantage of superior preparation, and though they are now really on the defensive, are still holding their lines with stubborn determination and valour. But there can hardly be any doubt that the resources of the Allies are considerably superior in every respect for a prolonged struggle. The German government will manage to keep a good front to the last possible moment; it is accustomed to control and regulate the life of its people, even in details, with a firm and efficient hand. There will be no shoddy clothing or rotten-soled shoes sent to the German soldiers, and every measure, every precaution will be taken to relieve and distribute the strain of the situation and to deal with financial embarrassment. Government orders have already fixed prices, rents, dividends, wages wherever the Government's hand can reach. But the Government cannot create resources, and there is a dangerously artificial element in the control system which is apt in the end to

bring down the strong with the weak together in a sudden collapse.

A word on the German societies in the United States. It is very natural that the German-American colonies in the large American cities should form themselves into societies for the aid of sufferers in Germany from the war. A great *Vaterlandshilfe* society is being organized in Newark which is to be a permanent establishment to deal with the needs not only of the present moment but to look after the widows and orphans that the war will leave unprovided for in Germany. There could not be a better road for the German-American dollars to go than that. In the Vereins, Kriegerbunds and such German-American societies there is also great activity in the controversial line. The righteousness of Germany's cause and the wickedness of Russian or English designs are the theme of all orators. What perhaps is not so natural on the part of supposed "American citizens" is that they make it very hot for any native-born American clergyman or publicist who has dared to express an opinion in favour of the Allies. We want an "honest neutrality," writes the President of one of those associations, rather comically, apropos of a Brooklyn pastor who had been uttering unfavourable opinions on German militarism, and he challenges the poor man to a public discussion on the platform. These New York citizens are frankly merely German in sentiment, I mean they speak quite as an alien people, except when, like Mr. Ridder, they can use the American "we" to make a point against the British. At one of these meetings the girls sang the following refrain "with pride and joy":

Deutsche Mädchen wollen wir sein,
Haben Deutsche Eltern obendrein.
Deutsch sein ist die Ehre mein,
Wer wird sich schämen, Deutsch zu sein?

(German maidens we wish to be, German it is our pride to be, etc., etc.)

I have my doubts if all this exceeding and rather embittered activity on the part of German-American newspapers, Vereins, Defence Committees and the like is well conceived from the point of view of its influence on native American sentiment. I think it may rather sharpen the sense of the American people that in the German colonies of their large cities they have really got strangers and foreigners "within

their gates" whose traditions are different and in many ways alien to their own, whose heart and hope are really with another flag and another language. The Americans do not possess the equanimity of the British Empire in such a matter. They struggle naturally and instinctively for homogeneity, and perhaps it is some sentiment of this kind as well as a feeling that democratic ideals of government and civilization were at stake in this war that stirred the great American dailies to a very critical treatment of German statements and arguments.

Anyway, if I were Mr. Ridder I would suppress those little gibes and sneers which the *Staatszeitung* is bestowing on the native American for his readiness to send aid to the starving Belgians, or his "greed" in selling ammunition to the Allies, or his position as a ruler by conquest in the Philippine islands where at present there appears to be something of a rebellion—to the evident satisfaction of the *Staatszeitung*. But the Germans seem really to have lost their heads, their sense of reality and logic alike, in this wild swirl of world conflict in which they have involved themselves.

SHALL WE CALL IT A MORAL TRANSFORMATION?

In the first volume of his history Treitschke describes the traditions which have gone to the making of the German, or, more properly perhaps, the Prussian spirit. He claims for the Prussian government the merit of efficiency and vigour. Its contempt for modern constitutional ideals founded on the rule of the people has been proverbial. "It never pretended," he says, to have any enthusiasm for such things as the admission of 500,000 half educated people to a voice in the government of the country, but it kept its schools and its rural administration at the highest point of the age and it found real work for its aristocracy to do. He does not hesitate to admit that there is "a certain hardness, a kind of heroic brutality" in the system. Speaking of Frederick the Great and the tradition he has bequeathed to his countrymen he says: "The vital characteristic of this powerful nature is, when all is said, "the terribly ruthless German veracity." "Frederick gives himself out for just what he is and sees things as they are." And Treitschke tells with a grim kind of humour how when the

news of the death of the last male Hapsburg came, giving Frederick his chance for a great raid on Austria, the king called his councillors together and said to them: "I give you a problem to solve; when one has got the advantage, is one to use it or not?"

There is something of the same bold candour, stern realism, or whatever you like to call it in Bismarck's *Reminiscences* and even in his public speeches, his rather callous jokes, for example, when proposing the wholesale expropriation of the Polish nobility and farmers, jokes received with *Heiterkeit* (mirth) by the German Parliament. Nor has the tradition of outspoken candour been allowed to rust in our own time, as many of the Kaiser's utterances prove, notably that rather ferocious one to the German troops on the eve of their embarkment for China, or that to the Berlin populace on 6th February, 1907.* Even Chancellor von Bethmann-Hollweg has said things which the responsible statesmen of other nations would hardly dare to utter in these humanitarian, peace-professing times; even Professor Münsterberg, no less than General von Bernhardi, gives his sanction to the doctrine that to make war and the readiness to make war are the signs and symptoms of a really "healthy" and progressive nation.

Such candour may not be without its merit. There may be a frank, honest acceptance of realities in it, a "German veracity," such as Treitschke admires in the great Frederick. That being so, I am rather at a loss to understand the new moral attitude adopted by the Germans from the Chancellor downwards towards war, and especially towards Britain as the cause of this war. They seem at present decidedly inclined to credit Britain, and Britain alone, with all the "virtues," all the "health" and all the "progressiveness" which according to their doctrine are implied in the designing and making of war. She must be the greatest factor in progress at present extant—on their theory.

It is a striking psychological phenomenon any way you look at it. It is true there may be some people who take an-

* "Germany is now in the saddle and will show the world she can ride, that she will ride over all that lies in her path. . . . Well have we Germans learned the art of striking down . . . and we have an ardent desire to make use of it again in these coming times."—I quote from memory.

other view of it, who may regard it as little less than a kind of moral effrontery on the part of the Germans to attempt to transfer the responsibility for this war from their own shoulders to those of Great Britain. With an extensive German literature which all the world knows has been for a number of years breathing nothing but war and expansion by war, much of it, too, openly directed against Britain; with a magnitude of military power and equipment which of itself is almost a standing threat to other nations, particularly when wielded by the most arrogant military caste in the world; with the fact, also known to all the world, that Germany deliberately encouraged and supported Austria in an aggression which she knew must provoke a general European war; with the fact, also patent to all the world, that Italy, which was morally and legally bound to join with Germany in any truly defensive war, refused to support her in this war; with all these facts clearly before the world, that Germany should now be going about howling tearfully to all the nations: "Alas! what have poor innocent I ever done to occasion all this? it was that wicked England; I hate England," is far from being a heroic spectacle. And all because that British Empire, which Treitschke thought would dissolve at the first touch of the German spear, is showing it has reserves of military and financial strength which the redoubtable Teuton fears are going to turn the scale against him.

JAMES CAPPON.

PATRIOTISM.

I reproduce a letter from a Queen's graduate which appeared in the *Montreal Star* some days ago:—

To the Editor of The Montreal Star:

Sir,—I have read your article in Saturday's issue on "What Canadian Universities are Doing for the War," and while I see McGill, Toronto, and other universities given prominent mention, I fail to see the name of the only Canadian university that had a trained unit ready and which volunteered at the outbreak of the war. I refer to Queen's university. She is the only Canadian university which sent a separate unit to Valcartier and thence to the front with the first contingent. Her professors are now with the first contingent in numbers. A second body of trained engineers, under well trained officers (professors), leaves Kingston on January 2nd for Ottawa to proceed overseas with the second Canadian contingent, and another company of engineers has already put in about ten weeks' training and will enlist as a third Queen's contingent. Besides these three units, there are several hundred Queen's men training for the second and third contingents.

A QUEEN'S GRADUATE.

Poor Queen's graduate! He cannot be very old yet or by this time he would have got accustomed to this kind of oversight on the part of the big city daily. The injustice does not probably originate in the editorial rooms but with the writer of the article, who may have his own magnanimous reasons for passing over what Queen's has done. Only perhaps a wealthy establishment like the *Montreal Star* could afford to keep a sub-editor who saw that no obvious injustice was done in articles of this type—and a competent one.

J. C.

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CONTENTS

	PAGE
GERMAN PHILOSOPHY AND POLITICS	329
<i>JOHN WATSON.</i>	
OUR GREATEST COMMON DIVISOR	345
<i>DAVID H. BROWNE.</i>	
NATURAL MEASUREMENT AND INTERVALS OF TIME	351
<i>N. F. DUPUIS.</i>	
MODERN BRITISH FOREIGN POLICY	363
<i>J. L. MORISON.</i>	
QUEEN'S AND THE WAR	384
<i>D. M. G.</i>	
GERMANY'S CONTRIBUTION TO MODERN CUL- TURE	389
<i>E. F. SCOTT.</i>	
THE FINANCIAL POWER OF THE EMPIRE	400
<i>W. W. SWANSON.</i>	
DR. SAROLEA AND THE WAR	429
<i>W. G. J.</i>	
AN AMERICAN VERDICT	433
<i>A. S. F.</i>	
CURRENT EVENTS	437
The Great War.	<i>W. G. J.</i>
India and the War.	<i>K. N. COLVILE.</i>

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No. 4

GERMAN PHILOSOPHY AND POLITICS.

IT may fairly be claimed that in England, and in her free colonies, there has been in recent years a growing feeling in favour of the settlement of international disputes by agreement, rather than by the cruder method of a resort to arms; while in Germany precisely the reverse is true, the dominant party there being obsessed by the idea that the main purpose of the state and of its organization is that of national expansion. These two ideals have in fact come into open conflict in the present war. The motive power in the former is the demand for freedom; of the latter, the aspiration after national power and dominance even at the expense of freedom. Of course, any contrast such as this must be understood as merely expressing the main tendency and purpose of Britain on the one hand and of Germany on the other. It would be an exaggeration to say that the English people have in all cases deliberately sacrificed nationality in favor of freedom; and it would be equally one-sided to regard Germany as ready to sacrifice freedom in order to promote nationality. All that can fairly be said is that, if we ask how Britain and Germany differ in their political outlook, we must answer that, speaking generally, Germany values national expansion more than freedom, while England on the whole stands for freedom rather than for national domination. This first rough contrast, however, must always be understood in the light of the fact that, under whatever outward form of government a modern nation exists, it is necessarily a democracy: understanding by this a form of polity which expressly seeks to give utterance to the popular will, or at least cannot afford to ignore that will. The close connection between democracy and freedom is especially obvious in a country like England, which consciously seeks to base itself upon the consent of the people; but it

is not the less true that even in Germany the power of the people gives to the actions of the government its strength and influence. No doubt a Bismarck or an Emperor William has great power; but it is power which he can only exercise when he carries with him the mind and thought of the people, however that strength and influence may have been obtained. No statesman, and no king or emperor, can now play what Carlyle calls his "high-chess game whereof the pawns are men," without taking account of the desires and beliefs of the people. Diplomacy can otherwise effect little or nothing. In seeking to understand the relation of early German philosophy to the political history of Germany, we must therefore not lose sight of the historical conditions under which its exponents worked. Nor is it wise to forget the peculiar character of philosophy itself, which is not so much a prophecy of what is to be, as an attempt to sum up and formulate the meaning of what has been and is. Much of the popular writings called out by the present war seem to me to attach an exaggerated importance to the supposed influence of German thinkers and historians. No doubt anyone like Treitschke, who has the opportunity of educating successive relays of students, must in course of time exert a considerable influence upon the national mind; but it cannot be said that this influence has directly shaped and guided the political administration of the country. And if this is true of the historian, it is still more true of the philosopher, who, as Plato says, is or ought to be "a spectator of all time and all existence." Just because of this breadth of outlook, his direct influence on politics need not be, and seldom is, very great. When, therefore, a philosopher is said to have had great influence in determining the policy of a people, we must remember that by the very nature of his subject his influence is always indirect. No doubt, just as the scientific man may at times assume the role of the philosopher, so the philosopher may occasionally be tempted to leave his watch-tower and descend into the political arena; but both the one and the other usually pay the penalty of all attempts to deal with a subject beyond their sphere and control. The scientific man seldom makes a good philosopher, and the philosopher has time and again been proved to be a poor politician. Plato was summoned by Dionysius, the tyrant of Syracuse, to help in constructing and administering

a new constitution; but the upshot of this attempt to realize his idea that "the philosopher should be king or the king philosopher" was the further degradation of the Syracusan people, and the compulsory flight of the philosopher to his native city. Aristotle sought to defend the ancient city-state of Greece, at the very time when his early pupil Alexander was pursuing a career of conquest, which put an end for ever to that form of the state which, to Aristotle's mind, was the only true and defensible one. Nor is this practical ineffectiveness to be wondered at, when we consider that philosophy, which by its very nature deals with principles and laws, comes too late to produce an immediate practical effect upon the world. "The owl of Minerva," as Hegel says, "never begins its flight till the shades of evening have begun to fall." It is none the less true that the large way in which the philosopher contemplates life is of inestimable value. The philosophy of Plato or of Aristotle is none the less important, because it is based upon a form of the state that was doomed to perish; and though it cannot be said that the political speculations of the early German philosophers had any very direct effect upon public affairs, a short study of them may yet prove to be all the more valuable because, living in the realm of the eternal and necessary, these thinkers were not exposed to the influence of transitory feelings and desires, but dwelt, usually at least, in the realm of the ideal. It is true, as we shall see, that Fichte's *Addresses to the German People* chanced, from a fortunate concomitance of circumstances, to attract the attention of a Prussian statesman, and proved suggestive to him; but in truth this very case shows how very loose is the connection between philosophy and the politics of the day; for these Addresses are the impassioned utterances of a patriot, not the political philosophy of a speculative thinker.

German philosophy since the time of Kant may be divided into four main periods. We have, first, the period of the Critical Philosophy; secondly, that of Kant's Idealistic successors; thirdly, that of the modified Idealism of Lotze, Fechner and von Hartmann; and, lastly, the attempt to incorporate in philosophy the results of the special sciences. It is manifestly impossible in a short paper to attempt anything like a detailed account of these different periods in their historical connection; and I propose to limit myself almost entirely to a

short statement of the relations of Kant, Fichte and Hegel to the political movements in association with which they grew up. Let us begin with the general relation of Kant to the kingdom of Prussia, of which he was a subject. Born in 1724, twelve years after Frederick the Great, Kant outlived his royal master eighteen years. What then was the relation between the two men? The present royal family of Prussia had ruled in the sandy flats of Brandenburg, whose capital city is Berlin, since the year 1415. Like other German princes and states, Brandenburg was under nominal subjection to the so-called Holy Roman Empire. As it had no natural frontiers, its Electors had always thought it necessary to have what they called a "frontier of men," that is, an army out of all proportion to the scanty population. The Duchy of Prussia was acquired by one of those adroit tricks for which the family of the Hohenzollerns have always been famous. This duchy was at a considerable distance to the east of Brandenburg; and when in 1701 the Electors of Brandenburg became kings, they took the title of King of Prussia. The founder of the modern German army was Frederick William First (1713-1740), the father of Frederick the Great. His army was thoroughly drilled and disciplined, and cowardice was prevented by the simple expedient of shooting those who refused to go forward to an attack—a method which, unless they are greatly belied, the officers of the present army of Germany still put in practice. The creator of this effective machine-like army hardly ever made use of it in battle. His Potsdam giants, he felt, were so perfect that it would be almost criminal to employ them in actual warfare. In other respects Frederick William was a rude, simple, God-fearing Lutheran, with an undoubting belief in his own divine right to rule; and indeed one seems to see in him some trace of the peculiar characteristics of the present Emperor of Germany. His son, Frederick the Great, was neither simple nor God-fearing. Determined to enlarge his domains, and to increase the power of the state, he was as unscrupulous in his foreign policy as the most unscrupulous of his ancestors. He successfully enlarged his kingdom by the forcible seizure of the rich province of Silesia in 1740; at the Partition of Poland—originally suggested by him—he obtained a strip of land on the Baltic coast in 1772; while at the two other Partitions of Poland, in 1793

and 1795, he succeeded in annexing further slices of that unfortunate country, and so rounding out his kingdom. Austria at the same time obtained the rich province of Galicia. In his internal administration Frederick was a careful and economic ruler, protecting the commercial and agricultural interests of his people in the most effective way. His religious beliefs were those of the French Enlightenment, his model in fact being Voltaire. One good result of this indifference was the absolute toleration which he exercised towards any speculative creed whatever, so long as it did not interfere with his domestic or foreign policy. The death of this astute, ambitious and heroic man of genius in 1786 was almost immediately followed by the French Revolution; and, unfortunately for Prussia, and perhaps for the world, his successor was a man from whom no vigorous action of any kind could be expected.

It was into the strenuous and self-assertive world of Frederick the Great that Immanuel Kant was born. Living the quiet, cloistered life of a thinker and teacher, he took no active part in public affairs, although he never ceased to interest himself in the different political phases which occurred around him, and, indeed, in the political history of the world at large. His main interest was in the wider problems of human life. The rise and progress of the special sciences had seemed to be hostile to the moral and spiritual interests of man, and the chief object of Kant's endeavours was to reconcile the inviolability of natural law with the freedom and spiritual nature of man, as expressed in his moral and religious ideas. The conclusions reached by Kant as a result of long, continuous and strenuous thought were very different from those of Frederick; but there was this in common between them, that both had the strongest sense of the supreme importance of duty. On the other hand, the persistent endeavours of Frederick to extend the territory of Prussia by any means, however unscrupulous, was not in harmony with Kant's rigid notion of the binding character of moral law, or with the cosmopolitan point of view, to which, as it seemed to him, the world was inevitably tending. He dreamt of a time when all mankind would voluntarily recognize, that the only law of life for a rational being consists in absolute unselfishness and submission to the categorical imperative of duty. "So long as states," he said, "spend all their powers in vain and violent efforts at aggran-

disement, and thus hinder the slow toil of the education of the inner life of the citizens, the ideal of humanity can never be realized. Good that is not based on the highest moral principle is nothing but empty illusion and glittering misery." This ideal, however, as I have said, did not prevent Kant from showing the keenest interest in the political movements of his time. And, indeed, he lived in fateful days. Almost with his own eyes he saw the Seven Years' War; he followed with the deepest sympathy various phases of the distant conflict which ended in the assertion of the independence of the United States; and he lived to see the French Revolution inaugurated and the beginning of the career of Napoleon. His speculative politics may be inferred from an incident which occurred one day when he was dining as usual with a few friends. News had come of the establishment of the French Republic, and Kant, turning to his friends, said, with tears in his eyes: "I now can say with Simeon, 'Lord, let Thy servant depart in peace, for mine eyes have seen Thy salvation'." While Kant's conception of the perfect form of society was that of a Republic, he was willing to admit that, even under an autocratic form of the state, there may be partially realized that security of the whole, combined with the freedom of the individual, which was his own political ideal. When the sovereign recognizes, as Frederick the Great did, that he is himself only, in his own words, "the highest servant of the state," the spirit of a republic, it seemed to Kant, is virtually realized even in this alien form. For, in such a state, he argued, it is really the law that rules, and not an individual; and, therefore, in submitting to the rule of the monarch, the citizens may rightly claim to be free. Nevertheless, Kant was quite clear, that a constitution which is in form as well as in essence republican, is the only perfect guarantee of freedom. "The lower forms of the state," he says, "do indeed conform to the letter of the ideal state, but the spirit of it can only be realized perfectly in a republic." This is the burden of Kant's essay on the *Means of Securing a Lasting Peace*. Such a peace, he thinks, is only possible provided certain main propositions are accepted. No treaties must be made with a secret reservation of causes of quarrel; no state shall be transferred by inheritance or gift; no public debts shall be contracted with a view to war, or in preparation for it; and no state shall

make use in war of means for injuring the enemy of such a kind as to destroy reciprocal trust. These, however, are only preliminary articles; and we cannot hope, he thinks, to have a secure and permanent peace, until the constitution is republican, being based on the freedom and equality of the citizens. It is the people who suffer from war, not the king or a governing aristocracy; and a decisive step will not be made towards a lasting peace, until the power of declaring war is vested in the people. The adoption of a republican constitution, Kant therefore regarded as a necessary condition of the establishment of such a league of states as shall secure a lasting peace. The fact that men at the present day are so far sensible of their community, that "a violation of right in one place is felt everywhere," makes the ideal of a citizenship of the world, in his opinion, no longer a mere dream of philosophical enthusiasts, but a thing for the realization of which practical efforts may well be made.

Kant's conception of the state, although in a roundabout way it suggests an organic unity, was based upon an individualism, which, but for the saving elements that he incorporated in it, would have logically led to its destruction. A nation is not an aggregate of isolated individuals, but a spiritual union based upon the universal nature of man. Now, the French Revolution, while it began in a righteous protest against the sectionalism and injustice of the ruling powers, was defective in this way, that its promoters had no clear idea of the limits which any state, whether republican or aristocratic, must observe. When these limits are ignored, the result can only be the despotism of a capricious and arbitrary democracy, which is only the complementary opposite of a despotic monarchy. Beginning in a protest against tyranny, the Revolution ended in a ruthless attempt to "force other nations to be free," an attempt which ignored the principle, that the freedom of a people, like the freedom of the individual, cannot be secured by any form of external compulsion. It seems as if there was an almost inevitable tendency in every successful war of conquest to lose sight of the proper limits within which a nation must by the nature of things restrict itself, unless it is willing to run the risk of sacrificing its own independence and freedom. In any case, the French Revolution of 1790 was, as a matter of fact, followed by events

which would probably have caused Kant, had he lived, to feel, like Wordsworth, that he had not really grasped the full significance of that world-cataclysm. Hardly was the Revolution proclaimed, when in 1792 there began a war, which lasted for twenty-three years, and brought France into conflict with every great state, and almost every little state, in Europe. The principles of natural right proclaimed by the revolutionists, however powerful they might be in effecting a liberation from the yoke of despotism, proved to be incapable of reconstructing the state on a better basis. The attempt to force one nation to change its constitution at the beck of another, thus overriding the just demand of its subjects to legislate for themselves, and endeavouring to anticipate the slow and gradual process of the world, is sure to result in disaster both to the forcible reformer and to his unfortunate victim. To the demand of France, that the German princes should set about the task of reforming themselves and should at once grant to their subjects their natural and inalienable rights, Germany was not prepared to respond. Nor was England, which, in defence of the public law of Europe, joined Germany in her protest against the well-meant, but impracticable attempts of the Revolutionists to remake the whole of Europe after the pattern that to them seemed obviously right and proper. During those terrible twenty-three years the French played with the maps of Germany and Italy in the most arbitrary fashion. Napoleon showed absolute contempt for the independence and freedom of other states; and his career of conquest suffered no interruption, until it was finally broken against two great nations: against Spain, a proud people passionately devoted to their country, and against Russia, whose religious and patriotic sentiments revolted against the high-handed proceedings of the conqueror. During those fateful years, Prussia played rather an ignoble part. It was she that in 1795 began the war against Napoleon; but only three years later she withdrew from it, leaving her allies to fight it out as best they could, and gaining as the price of her supine neutrality a little more territory east of the Lower Rhine. This attitude she contrived to maintain till 1806, her main protection being the traditional fame of her army. Napoleon was not in the least awed by the popular estimate of her military powers; and after he had smashed

Austria at Austerlitz, he proceeded, in his unscrupulous way, to attempt to bargain with England for the restoration to her of Hanover, which he had originally contemptuously ceded to Prussia as the reward of her neutrality. As a matter of fact, Prussia proved to be no match for Napoleon, who easily defeated her armies, and parcelled out her territory among submissive dependents. This hard fate proved to be her salvation, arousing in her the latent fires of patriotism; and when Napoleon was beaten by Russia in 1813, there was ready to oppose him a German nation in arms, prepared to fight to the death for her independence and autonomy. As we all know, in combination with England, she finally overthrew, on the plains of Waterloo, the hitherto unconquered Napoleon, and Europe was at last free.

These very perfunctory remarks on the history of Germany will help us to appreciate the spirit in which Fichte composed his famous "Addresses to the German People." The idea which permeates them is, that the nation is something more than the state as conceived by Kant. We find in them an almost unconscious transition from a lower to a higher conception of society. Fichte, it is true, still speaks in the language of his master; but, under the guise of an opposition between the state and the nation, he is virtually affirming that society must be essentially organic in its character. The success of Frederick the Great in extending the boundaries of Prussia and improving its internal organization had generated a strong national feeling; but, after his death, it gradually died away, giving place to a vague sentimental point of view which assumed to be wider and loftier than any merely national or patriotic sentiment. After the disaster of Jena, and the humiliation of the Peace of Tilsit, it became evident to Fichte, that the duty which lay nearest to him was to awaken the slumbering patriotism of the German people. This was the object of his noble and impassioned Addresses. Sometimes, no doubt, they speak in the language of a narrow patriotism, instead of being utterances of pure reason, as Fichte characteristically assumed them to be; but, even if we grant that he overestimates the degree in which Germany contains the elements of an ideal humanity, we must at the same time admit that he nowhere, directly or indirectly, gives countenance to the notion that it was her mission to effect the

forcible conquest of the world. Nor does he grant for a moment that true national prosperity can be expressed in purely material terms. "For centuries," he says, "during the rivalry of all other nations, the German has shown little desire to share the freedom of the sea in any great measure. Nor need he do so. His richly endowed land and his industry afford him all that the cultured man needs for his life; he has no lack of industrial skill; and in order to appropriate to himself the little real gain which international trade yields, namely, the expansion of the scientific knowledge of the earth and its inhabitants, his own scientific spirit will provide him with a means of exchange. . . . Nearly a decade before anyone could foresee what has since happened, the Germans were advised to make themselves independent of the world market and to close up their borders as a mercantile state. This proposal went counter to our habits, and was hotly opposed and rejected. Since then we have learned, not without dishonour, to dispense with much which we then declared our liberty and our highest honour would not allow us to dispense with. May we seize the opportunity, so long as luxury does not blind us, to correct our ideas! May we at last recognize that, while the airy theories about international trade and manufacturing for the world may do for the foreigner, and belong to the weapons with which they have always invaded us, they have no application to Germans, and that, next to unity amongst themselves, their internal independence and self-reliance are the means to their salvation and through them, too, the welfare of Europe.* Evidently, therefore, the vision of Germany which Fichte had in his mind was not that of materialistic progress, but the development of a land of thinkers and idealists. He prayed his countrymen to remember that they came of a stock whose true mission was to be the standard-bearers of the great spirit of civilization. Why, he asks, did the ancient Germans resist the might of Rome for so long? "A Roman writer makes their leaders ask, whether anything else remained for them, but either to assert their liberty, or to die before they were made slaves. To them freedom meant just remaining Germans, continuing to settle their affairs in-

*Quoted in W. H. Dawson's *The Evolution of Modern Germany*, pp. 4-5.

dependently and spontaneously, according to their own disposition, and also developing in accordance with it, and transmitting the same independence to their posterity; while slavery to them meant all the advantages the Romans offered in their endeavour to force them to become half-Roman. They assumed it as a matter of course, that any one would rather die than see this happen, and that a real German could only wish to live in order to be and remain a German and train his family to be so, too. . . . A nation that is capable, if it were only in its highest representatives and leaders, of fixing its eyes firmly on the vision from the spiritual world of independence, and being possessed with the love of it, like our earliest ancestors, will assuredly prevail over a nation that is only used as to the tool of foreign aggressiveness and for the subjugation of independent nations, like the Roman army; for the former have everything to lose, and the latter only something to gain.”*

The nation, according to Fichte, is something higher and greater than the state. The object of the latter is to secure the citizen in his rights, to maintain internal peace, to provide a livelihood for everyone, and to secure material prosperity. All this the Romans would have secured for Germany better than she was herself able to do; but ancient Germany would have none of it. Fichte did not himself draw the inference, that there should be only one German people; but his doctrine seems logically to lead to that conclusion, and also, as a corollary, that the independence of other nationalities ought to be respected. In his view Germany possessed a cohesiveness and originality found in no other nation; a view which he bases upon the contention, now known to have no proper foundation, that the whole of the people of Germany were of a single stock. Discounting this not unnatural prepossession, we find in these *Addresses* an insistence on the fundamental truth, that the life of a nation cannot be estimated in terms of military power, or of material prosperity. “Strive not,” says Fichte, “to conquer with bodily weapons, but stand before your opponents firm and erect in spiritual dignity. Yours is the greater destiny, to found an empire of

*Seeley's *Life and Times of Stein*, pp. 33-34.

mind and reason . . . to destroy the dominion of rude physical power as the ruler of the world." His noble appeal did not fall on entirely unwilling ears. The German people were aroused from their sentimental dreams; and Stein, who was much impressed by Fichte's words, proceeded to translate them into the terms of practical politics.

Like Fichte, his successors, Schelling and Hegel, were exponents of a nationality in which moral forces should be predominant. In their youth both of these thinkers had been aroused to enthusiasm by the struggle for freedom in which the French Revolution began. Hegel, however, soon passed the stage of the worship of unlimited individuality, finding in the artists and philosophers of Greece the true type of a modern state. "At the name of Greece," as he said to his students, "the cultivated German feels himself at home. Europeans derive their religion from a further source, but their science and art, and all that makes life satisfied and elevates and adorns it, we derive from Greece directly or indirectly." His general point of view in fact was that of Lessing, Herder, Goethe and Schiller, except that, unlike Goethe, he believed that the ideal must be realized through the nation. These writers had in their mind's eye something much larger than any single political organization; and, though Hegel has been accused of identifying his ideal state with the Prussian form of government, those who know his writings most familiarly will refuse to admit that he was thinking of any actual state as final when he wrote his book on moral and political philosophy. Certainly it would be as absurd to cite Hegel in defence of the narrow sectarianism of the Military Autocracy, into which Germany, one hopes only temporarily, has fallen, as to identify the term "Culture," as employed by Goethe, with the abuse of the term by recent German specialists. Hegel was the first to introduce the idea of development in a large and liberal sense, and to employ it in his interpretation of history, and the history of philosophy; but it need hardly be added, that he did not narrow the idea of development to any merely mechanical evolution—thus avoiding the fatal blunder of some recent German thinkers, who seem unable to distinguish between a development which consists in the deliberate and self-conscious evolution of man, and a development supposed to be dependent upon the impact

of rigid mechanical causes. Nor is it at all true, that Hegel supposed the development of modern Europe to consist in the political expansion of Germany alone, and much less in the dominance of Prussia over all other nationalities. The Political Philosophy of Hegel is really an attempt to unite the two ideas of freedom or self-determination, and organic or spiritual unity. That this is the natural advance in political idea over his predecessors is suggested by the sketch, already given, of the difference in this respect between Fichte and Kant; the former suggesting, though not clearly, that larger spiritual unity which transcends the limited sphere of the state. Hegel brought together two ideas, which in Fichte had been kept apart and even opposed. Hence, Political Philosophy has much to learn from him in the way of avoiding all forms of Individualism. His political philosophy is free from the special weakness of that of the English Radicals, who never succeeded in liberating themselves from the fallacy of an indefensible Hedonism, according to which the object of the state is simply to promote "the greatest happiness of the greatest number," to use Bentham's famous formula. Nor was Hegel an advocate of anything like the forcible suppression of free speech and free thought. On the contrary, freedom seemed to him to be the necessary condition of human progress. It must be admitted, however, that, after he went to Berlin, he seemed to some extent to forget the breadth and fulness of his earlier conception of the State, and to make concessions to the dominant political party which are difficult to reconcile with his earlier views. It almost seems as if no German could resist the temptation to see his ideal realized in the institutions and laws of his own country; but of Hegel it may at least be said, that, unlike Fichte, who always thought that his latest practical and even personal ideas were a revelation of the Absolute, he was always careful to add, that philosophy must not be identified with prophecy, or even with practical statesmanship. The philosophy of Hegel in general makes the strongest claim in favour of a concrete, as distinguished from an abstract, Unity, maintaining that the source of all bad philosophy consists in abolishing the former in favour of the latter; and there can be no doubt that, interpreted in the light of this central idea, his political philosophy demands the free play of the individual, and the freedom and independence of the various states of the

world. Such a conception of the destiny of a single nation as that which has been preached in Germany by Treitschke and Bernhardi would, I feel sure, have seemed to him an illegitimate identification of a single imperfect state with the absolute state. As I have already reminded you, Prussia, during the struggle of Austria with Napoleon, had selfishly abandoned the war which she had first initiated, and had even, to use the words of one of her own statesmen, fallen into "that lowest of degradations, to steal at another man's bidding." In 1806, however, she was at last goaded into declaring war against Napoleon, and was easily defeated. At this time Hegel was teaching philosophy in Jena. As he was putting the finishing touches to his first great work, the *Phenomenology of the Mind*, some French soldiers entered his lodging, and threatened dire things against him. The story goes, that he appealed to one of them, who had on his breast the ribbon of the Legion of Honour, to be worthy of the badge he wore. Hegel had written two pamphlets previously, in which he tried to account for the political and military weakness of Germany, and to suggest how the empire and minor states might be regenerated. For the bureaucratic machine of Prussia he had, at least originally, no special respect; and the method of regeneration suggested in those pamphlets was the unity of all the German states under the hegemony of Austria. In this prognostication he was no more successful than other philosophers when they leave their proper sphere; for, as we know, the restoration of Germany was to come from the reforms of Stein, Scharnhorst and Hardenberg, not from Austria. One saying of Hegel's in a different vein is worth quoting, and might well be taken to heart by the present military party in Germany. "Napoleon," he said, "put the greatest genius into military victory, only to show how little after all mere victory counts for." In a letter to a friend, who had written to him in despair, he says: "Philosophy is the only theodicy; it alone can keep us from looking at events with the stupid astonishment of an animal, or, with short-sighted cleverness, ascribing them to the accidents of the moment or the talents of an individual, and supposing that the fate of empires depends on a hill being or not being occupied by soldiers—as well as from lamenting over them, as at the victory of injustice and the defeat of justice. The French nation, by the bath of its revolution, has been freed

from many institutions which the spirit of man has left behind like its baby shoes, and which therefore weighed upon it, as they still weigh upon others, as lifeless fetters. What, however, is more, the individuals of that nation have, in the shock of revolution, cast off the fear of death and the life of custom, which in the change of scene has now ceased to have any meaning in itself. It is this that gives them the prevailing force which they are showing against other nations. Hence especially comes their preponderance over the cloudy and undeveloped spirit of the Germans; who, however, if they are once forced to cast off their inertia, will rouse themselves to action, and, preserving in their contact with outward things the intensity of their inner life, will perchance surpass their teachers.”*

It will be evident from what has been said, that while the German Idealists had a passionate desire to see the unity of Germany accomplished, they by no means thought of achieving that end by force, much less of attempting to extend the empire of Germany beyond the boundaries of the German people. The weapons with which they sought to arm their people were not carnal, but spiritual. The German people was, in their view, an instrument of the higher civilization, and what they mainly counted upon for the realization of their ideal was a revised system of national education. It is, however, hard for a people to dwell continuously on the heights; and after the death of Hegel thinkers like Feuerbach, while claiming to be his disciples, put forward a theory in which the spiritual was assigned a very ambiguous place, all the stress being laid upon the particular and the sensible. It was quite in keeping with this changed point of view that Karl Marx should attach supreme importance to the influence of economic forces, which for him were the sole factors that determined, not only social conditions, but also scientific and religious activities. The influence of such crude and superficial views on the popular mind was very great, and partly explains the rise into popularity of the pessimistic philosophy of Schopenhauer. Bismarck, by his ruthless policy, had succeeded in unifying Germany under the military predominance of Prussia. A

*E. Caird's Hegel, pp. 67-68.

period of tremendous political, economic and commercial activity supervened; and not unnaturally, in this absorption in the outward, the high poetic and philosophic activity which had distinguished the age of Goethe and Schiller, of Fichte, Schelling and Hegel, languished and decayed. A nation that thinks only of commerce and military aggrandisement cannot be expected to produce great poets or philosophers. Lotze, indeed, tried hard to extract something like a spiritual creed from the actual facts of life; but his laborious and but half-inspired speculations had little influence upon the nation at large. The really popular philosophies were those which taught the supreme importance of strenuous activity. The ordinary sanctions of morality must not be allowed to stand in the way of the realization of an ideal humanity. In the universities, again, the tendency of philosophy has been to devote attention to special problems, and to leave the wider problems aside. And this is only natural. A nation whose energy is almost entirely devoted to the expansion of its material well-being, and is obsessed by the dream of world-dominion, cannot, in the din and bustle of active life, hear the voice of the higher reason. Culture, in the wide humanistic sense of Goethe and Schiller, Fichte and Hegel, ceases to have any charm. "We have lost in these days," says Windelband, "much of the old joy of spiritual creation, much of the old respect for theoretical activity, of the old love of knowledge for its own sake." Whether Germany will ever free herself from the fetters which have been fastened upon her by the military despotism which has deflected her from the sane and healthy pursuit of higher things, it is impossible to say. No doubt she cannot return to the simplicity of an earlier day, nor is it advisable that she should do so; but it is to be hoped that, taught by adversity, she may recover in some measure the great spirit which animated her of old, and that, on the basis of an economic, political and philosophical theory which will allow for the free play of other nationalities, she will develop a polity which will cease to be a menace to the rest of the world. When that day comes, she may once again display the speculative power in which she was once pre-eminent. At present one cannot name any thinker of Germany worthy to be placed beside the philosophers of her heroic age.

JOHN WATSON.

OUR GREATEST COMMON DIVISOR.

WHEN I went to school I learned, by considerable mental effort and often by painful physical experience, that certain numbers could be related to one another in two distinct ways—they might have a least common multiple or they might have a greatest common divisor. For those of you who have forgotten such higher mathematics I may explain that 12 is the least common multiple of 6 and 4, and 2 is their greatest common divisor.

Men, like numbers, may be grouped in similar fashion, either as parts of a whole or as whole units, possessing a common part. As parts of a whole we are united under various organizations. We are Canadian—we are members of the Canadian Mining Institute—we are Masons or Baptists or belong to the militia. Every one of us in some such way is tied to his fellow-men, and merges somewhat of his identity in an organization which is to him a least common multiple. On the other hand, these organizations spring from the fact that in all the different members is something of likeness or resemblance which draws them together. They are all born and bred in this country or have absorbed and assimilated its traditions, and that common factor makes them Canadians, just as the fact that we are all interested in kindred subjects makes us members of the Society of Mining Engineers.

All this may appear to you trite and irrelevant. Nothing that affects humanity is ever irrelevant, and I want to suggest to you how the habit of mind which we fall into, from consideration of ourselves as groups or as individuals, affects our national life in this crisis of the world's history.

If we look at the real cause of this struggle; if we look not at the circumstances, but at the motives, we see clearly enough that at the back of it all lie two distinct habits of thought and methods of national unity. Our ideal—in England, in Canada, in the United States—is a nation of individual units, each personally interested in the welfare of the state. The state with us is an abstraction which we ourselves must realize. Hence, our form of government is a perpetual balance or compromise, mobile and flexible. We ourselves have created these rules of mutual relations; we ourselves can re-

peal them. Laws with us are conventions which we agree to observe. Outside of breaches of morality, our laws are simply regulations so devised that one individual does not unduly interfere with his neighbor. As Chesterton puts it, we drive on the right hand side of the road on Broadway and on the left hand side on Picadilly, and there is no real virtue in either rule, except that all agree to observe that rule. With us, under our democratic government, in England, in Canada and in the United States, the state is a creation of the people, by the people and for the people.

Opposed to this is an entirely different theory—a Teutonic ideal that the state is something other than and outside of the people. In this conception the government is not the outcome of a number of individuals pooling their joint interests. It is pre-existent. It is above and over the people and not of and because of them. Hence to the Teutonic mind the law of the individual and the law of the state are two entirely different things. Certain individuals designated by God, or by accident of birth, are the state, and from them permeates downward through the people all law and order. Now, when we consider two civilizations, existing side by side, and each constantly impinging on and coming into contact with the other, by trade or by travel, it is quite evident that if these two civilizations are based on such different principles as have been outlined there must inevitably arise certain misunderstandings. It is quite evident, too, that as a machine, the Teutonic ideal is certainly more efficient. Such a merging of individuality, such a compression into a common mould, will undoubtedly accomplish a desired result more quickly than can be obtained by any individual or unanimous effort.

Hence, in the carrying out of this idea of government there is an advantage which can be reckoned in terms of material progress. In all business, in agriculture, in mining, in metallurgy, in chemical industry, in trade relations, in the arts of war, and in all material elements, we are amazed at the efficiency attained, at the results secured.

We have to examine a little deeper into national characteristics in order to realize that such material success brings with it certain weakening of moral sense. All success must be paid for, and the question every man must settle for himself is whether such success as he attains is worth the price he

pays for it. If you look back over the history of England you will see in that drama an unfolding of a nation from the law of rule by the least common multiple into rule by the greatest common divisor.

The narrow mould into which Queen Mary sought to compress the English character was broken and individual expansion found its greatest field in the time of Elizabeth. The binding limits of conformity closed in again in the time of Cromwell; the mould was again broken in the reign of William and Mary. In the time of the Georges we find the domination of landed interests gathering the fragments of the broken frame and endeavoring again to compress our national spirit into its limits. The revolt of the American colonies, the repeal of the corn laws, the disestablishment of the Irish Church, the present-day movement to equalize the holding of land—all mark the progress toward another period of individual liberty. If we consider the present-day attitude of the average Anglo-Saxon toward the laws of his country we find that he regards these laws as established, not so much to restrict his own liberty or individuality of action as to prevent others from undue interference therewith. Just as the rope stretched across a street by the firemen prevent interference with them in the exercise of their business, so the lines of law are stretched between one man's business and his neighbor's—not to separate their activities so much as to prevent the interference of these activities from resulting in harm to both.

From this comes the disposition of the average Anglo-Saxon to regard the spirit rather than the letter. Continual application of this principle has resulted in certain national characteristics—a sense of fair-play, a regard for the rights of others, a desire to accomplish results by compromise and balance.

The Teutonic idea of law is altogether different. It presupposes certain restrictions, demands certain duties, and enforces certain obligations, in order to accomplish a certain result. That these regulations are desirable is proved to the Teutonic mind by the fact that they accomplish certain material results. Escape from these superimposed conditions can come only by revolution or by threat of revolution.

The effect of this is an undue appreciation of law as such without regard to the ethical values involved. Success justi-

fies any measure. The mere fact of accomplishment justifies all the steps taken in its accomplishment. This worship of success, of material interest, of physical progress, leads to a curious inhibition of moral sense. No one who is at all familiar with the national characteristics of Germany can fail to see this effect of casting the mind into such a narrow mould. The Zabern incident might be paralleled in any other line of activity. We can contrast the philosophy of Nietzsche with the philosophy of Bergson, and find no greater difference than exists between the Zabern incident and the landing of arms at Clontarf. The parallel accomplishments of German policy in Poland and of English policy in Ireland during the last thirty years are no more different than the habits of mind which underlie those policies. It is the difference between annihilation of an opposition and the assimilation of that opposition by meeting it on the ground of a common understanding.

In the present conflict of ideas there exist great dangers of misunderstanding. The human mind is, on the whole, very much alike everywhere. Habits of thought, however, are matters of exercise, and in this proneness of the German mind to flow into and fill the moulds provided therefor, and to emerge from those moulds in identical forms, lies the greatest danger of misunderstanding.

No explanations can explain away an ethical value. Explanation after explanation of the Austrian ultimatum to Serbia or the German invasion of Belgium serve no purpose. The mass of the American people simply hark back to the ethics of the case. Some ideas need no explanation—they are self-evident to the Anglo-Saxon mind, and no explanation can make them otherwise. In attempting to understand these explanations we are bewildered, unless, at the same time, we consider the effect on German ideals brought about by their conception of law and the state.

With us the individual is the final unit; the state is simply an aggregation of these units, and, judged by the same laws, these units have been made to delimit their own activities. Hence the Anglo-Saxon carries into his idea of the nation those ideas which govern his own conduct; those ethical relations which he spontaneously exercises towards his fellow-men.

In the other case, the state being self-existent and deriving no power or authority from the individual, is not to be judged by those ethical relations which govern the nations of man to man. The old phrase, "The King can do no wrong," we of Anglo-Saxon descent qualify with the explanation, "because he always acts by the advice of his Ministers." But "The Kaiser can do no wrong" is explained simply by the proposition that Kingship is not bound by law.

We come back, therefore, to our greatest common divisor as the source of British solidarity and unity in any crisis. What then is this mainspring of action which governs our policy, our philosophy, and our mutual relations? What is the reason of our willingness to bear the white man's burden—or any burdens whatsoever? I do not think this motive is far to seek. It seems to lie in the fact that the Anglo-Saxon, by his training and tradition, by his education, his religious and moral habit, and his instinctive philosophy, looks upon himself as a free, willing agent, responsible for progress of himself and his fellow-men. He conceives of himself primarily as an individual with free choice of action. All the history of England, as well as the history of the British Colonies, and of the United States, is an expression of the rights of the individual. Every revolt from Magna Charta down has been based upon the right of the one to such action as benefits himself and does not interfere with the same liberty of another.

This saving clause, that liberty does not mean license or anarchy, springs from the correlated idea that while man's life is individual, it is also responsible. Individuality carries with it a sense of oneness or self-containedness. Responsibility carries with it a sense of collectiveness which modifies the demands of the individual and makes him mindful of the rights of others. He conceives of himself not only as individual, but also as agent.

This agency, this responsibility, is an outgrowth of centuries of training, a result of gradual attrition of the influences of education and religion, the single elements of which are so numerous that they escape us, but the combined action of which has been the production of a national character.

The British mind is primarily religious. By this I do not mean addicted to the expression of religious emotion—far

from it. Such an expression is felt to be in bad taste, as an exhibition of those feelings which we regard as most peculiarly personal. I mean that the national mind instinctively feels that nature is not fortuitous, that there is a plan or idea in the universe, that the unfolding of this plan is revealed by material and moral progress, that this progress is self-evident, and that our own life is a part thereof. And so, feeling all this, realizing it more by instinct than by intelligent and logical statement, the Anglo-Saxon mind grasps the idea of ethical values and knows that no matter what his personal preferences may be certain ideas are and always will be right.

Many of you like myself have seen in a single generation a whole system of theological machinery swept into the scrap-heap, and have wondered if with it the whole system of morality would also perish. We know it will not and our knowledge of this is entirely instinctive. We know that whenever we try to translate an instinctive conviction into intellectual conceptions we cast the thought into a mould which is too small for it. Truth cannot be expressed because it is part of life, and life lies too deep for words. Poetry, literature, the ritual of worship, the language of love, the laws that govern our relations with our fellows, are all endeavors to express in concrete and finite terms those instinctive ideas which we feel to be greater than the bounds in which we try to express them.

It is this feeling of common participation in certain ethical values that we find the keynote of the Anglo-Saxon character. All our repression, and our lack of outward expression which is so baffling to an outsider, is due to the fact that feeling with us lies below the threshold of expression. Instinctively we know that certain things are right, and we know also that life is action and action can not be subdivided and expressed in finite units. The letter killeth, but the spirit maketh alive. So when we feel ourselves responsible and individually responsible for the progress of the race, our expression takes the form of action rather than of explanation, because we know that those who possess that same instinct need no explanation, and those who do not possess it can never understand the motive of our lives.

DAVID H. BROWNE.

Copper Cliff.

NATURAL MEASUREMENT AND INTERVALS OF TIME.

Clocks and watches, or what are generally known as time-pieces, enable us to divide up, with accuracy, a given time interval into shorter and equal intervals, but, in themselves, they can give us nothing that we can call a natural interval of time, as this is not their function.

Thus they divide the day, if we take that as a given interval, into 24 equal parts which we call hours, the hour into 60 equal parts called minutes, and so on—parts which, although having a fixed relation to one another, are yet purely arbitrary. And time-pieces do this by the rotary movement of certain elements which, after fixed and determined intervals of time, return to the same phase.

And what is true of the artificial or mechanical time-piece in this relation, is true also for those elements which determine for us our natural time intervals, and which we may call our natural time-pieces. The principal difference is that while we can subject to our own will the machine that we have invented, and constructed, it requires the highest mental efforts to comprehend the principles which enter into the great machine of the universe, whose movements are wholly beyond our control.

Periodic movement is the order of things in mechanical time-pieces, as when the hand completes its circuit of the dial and returns to the point or position whence it set out, and periodic movements of equally definite and accurate character are characteristic of the changes which take place in the relative positions of the sun and his attending planets. And it is to these latter that we must look for our natural time-pieces.

Of these periodic movements, which are numerous among the heavenly bodies, and of which any one might be chosen for our purpose, two only can be said to have a vital interest for all humanity, and to be intimately bound up with the necessities and comforts and conveniences of life upon the earth. One of these is the rotation of the earth on its axis, which brings in the alternation of darkness and light and gives us the interval known as a *day*, and the other is the revolution of the earth in its journey about the sun, which is characterized by the recurrence of the seasons, and which is called the *year*.

We may state here that there is more than one kind of day and more than one kind of year in use, and that these are not

commensurable with one another, and that their relations are somewhat complex. This part of the subject will receive special attention.

As the most obvious phenomena presented to human beings are the daily course of the sun and the recurrence of light and darkness, we shall begin this discussion by a consideration of

The Day.

Of all the periodic movements in the heavenly bodies the rotation of a planet on its axis is, for very strong physical reasons, believed to be the most uniform and invariable in character. And for dwellers on earth no phenomenon is invested with more importance than the alternations of light and darkness, or, popularly speaking, day and night. All ancient people, as far as we know, separated sharply between these, calling the period from sunrise to sunset, day, and that from sunset to sunrise, night. And this is a convenient popular usage yet, and one that seems to be most natural. But such a usage cannot be regarded as a scientific one. For, what we are in search of is an invariable period of time which can be taken as a unit, and such a usage gives to all places, not on the equator, days and nights which are continually varying in length, although the sum of the two is practically constant.

A better usage, and in fact the scientific one, is to regard the night as a part of the day, just as we do the morning and the evening, and then to define the length of the day as the interval elapsing between two consecutive sunrises, as seen from a fixed locality at which the sun rises and sets daily.

If we exclude the conditions prevailing in the frigid zones, a day defined in this way would be practically fixed and constant in length, and it is to the division of days of this kind only that the modern clock is applicable.

From the foregoing considerations it appears that we may most profitably adopt the earth's axial rotation as a natural time-keeper, and define a day, in general, as the time taken by the earth to make one rotation on its axis.

This definition, however, is not rigidly correct for some of the days in use, so that in all cases, while having reference to the earth's axial motion, we had better define each kind of day by the character of the idea which it embodies.

But how are we to know when the earth has completed one rotation, starting from any given moment? Naturally we must refer the motion of the earth to some celestial body such as the sun or a star. A difficulty, however, comes in here if we are desirous of measuring the exact length of time for one rotation, and that is that all the bodies to which we can refer are themselves in motion, and are moving at different rates or with different velocities. So that we have no absolutely fixed point of reference. Under these conditions it is just as well to abandon the idea of an exact rotation, and to accept such a fixed and determined part of a rotation as may suit our purpose, and adopt this for our unit. And this is the course followed.

The meridian, and transits. The imaginary circle in the heavens which passes from the south point of the horizon, through the zenith, to the north point of the horizon is *the meridian* of the place having that horizon and zenith. This circle, of course, passes all the way around the heavens, going through both poles, and through the nadir, or that point which is opposite the zenith, but we can make use of only the upper half.

When a heavenly body, as the sun, or the moon, or a star crosses the meridian, the heavenly body is said to *transit* the meridian.

Now the sun and the moon and all the stars which, in our latitude, pass some distance south of the zenith, appear to rise in the east and set in the west, and consequently, at some time in the twenty-four hours, or thereabouts, they are seen to transit the meridian. This appearance is due, not to any motion in the bodies themselves, but to the earth's axial rotation, which causes any particular meridian to sweep over the whole of the heavens at each full rotation. Here then we have a practical means of observing and measuring the axial rotation of the earth, and of fixing our natural units of time measure.

The meridian being an imaginary line cannot be observed, and it is necessary to mark its position by a real line upon which to make observations. This is done by means of a telescope called a *Transit Instrument*, since it is so mounted as to serve the purpose of observing transits of the heavenly bodies across the meridian with ease and accuracy.

This instrument is so very important in every astronomical observatory that we proceed to describe its construction and its action.

In figure 1 is given a section of the transit instrument, in which the telescope and the axis and pivots upon which it turns are shown.

O is the objective which forms images of distant objects on the plane f shown in section by a dotted line. And E is the eye-piece.

At f is a diaphragm, consisting of a ring adjustable by screws s, s and carrying one or more spider lines t , as shown in figure 2.

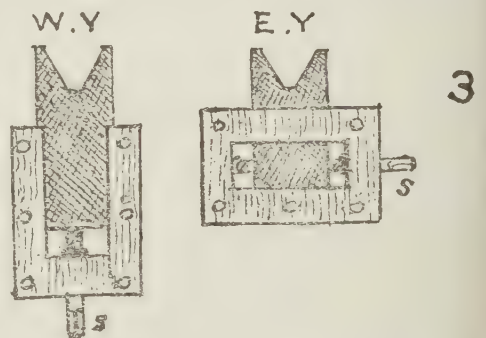
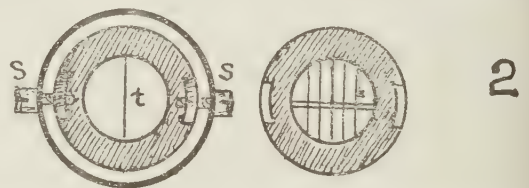
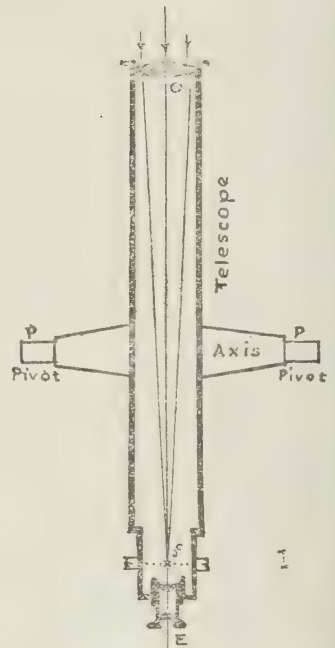
For the sake of easy explanation we confine our attention to the single line t , but the ring usually carries not less than 5 lines, which are called the *web*.

The transit instrument is supported by two metal or stone columns, an eastern one and a western one, carrying the Y s as figured in 3, $W.Y$ being fixed to the western column and $E.Y$ to the eastern one.

As shown, the western Y is adjustable vertically and the eastern Y horizontally. The pivots rest and turn in these Y s.

Now, by means of all these adjustments the line of sight of f can be brought to be at right angles to the axis of motion; this axis of motion to be exactly level, or horizontal, and exactly east and west. And when these adjustments are perfect, the line t , in all positions of the telescope, becomes a visible part of the imaginary meridian and takes the place of the latter in observations.

The necessary accompaniment of the transit instrument is the astronomical clock, and transit observations are made by noting the time at which a given heavenly body, as the sun or



a given star, crosses the meridian. The purpose of five threads in the web is to obtain the mean of five observations taken near together, as the resulting error is probably not more than one-fifth of what would be the case from a single observation. In the case of the sun, observations are made for each limb, and the mean of all these is taken for the time of transit for the centre.

In this way, and aided by a chronograph for registration, the error of observation should be reduced to as low as one-thirtieth or one-fortieth of a second.

The solar day. In these modern days of electrically illuminated city life, it is a common thing to extend the operations of the day far into the night, and even in many cases to work the whole night through. Nevertheless, in the great non-urban expanses of the world it is still as true as of yore that "the night cometh when no man can work," so that the world of labor and business, or what we may call the commercial world, must have relation to day and night, or light and darkness, that is to the apparent movements of the sun.

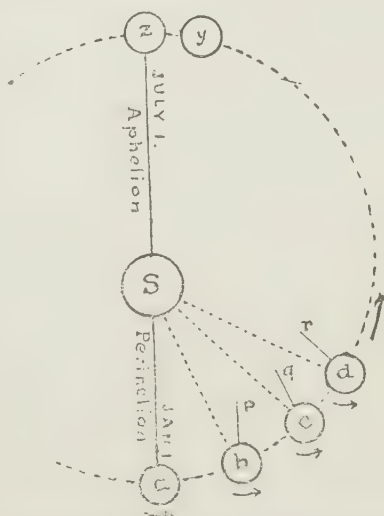
The moment that the sun's centre is on the meridian is *solar noon*, and the time elapsing between two consecutive solar noons is a *solar day*.

Now it does not require a very long series of transit observations to show that these solar days are not, and cannot, be equal in length, so that however important the solar day may be in business life it cannot be employed astronomically as a standard unit of time measure.

The earth's orbit, or annual path around the sun, is an ellipse, and the sun is not at the centre, but at one of the foci of the ellipse, as represented upon a somewhat exaggerated scale in the illustration, where *S* is the sun, and *a*, *b*, *c*, etc., are positions of the earth at different stages in its annual journey around the sun.

At *a*, about Jan. 1st, the earth is in perihelion, or nearest to the sun, and at *z*, about July 1st, it is in aphelion, or farthest from the sun.

At *a* the sun's attraction is greatest and the earth moves forward most rapidly, and at *z* the



attraction is least and the earth moves most slowly. And thus the earth decreases its orbital velocity from a to z , and increases it from z to a .

Let a, b, c, d , etc., be positions of the earth on consecutive days, starting from perihelion. At a , aS is the meridian at solar noon. But if bp is parallel to aS , bp is the direction of the meridian when the earth has made exactly one rotation on its axis. In order to complete the solar day it must turn through the additional angle pbS , which is equal to aSb . Similarly, in moving from solar noon at b to solar noon at c the earth must make one complete rotation and the additional angle bSc , etc. But the angle aSb is greater than bSc , which again is greater than cSd , etc.

This discussion brings out two facts—1st, that the completion of a solar day requires more than one complete rotation of the earth, and 2nd, the solar days are longest about January 1st, and grow gradually shorter until about July 1st, when they are shortest.

Thus observations show us that on January 1st a solar day is equal to the time of the earth's rotation plus four minutes and four seconds, and on July 1st it is equal to the time of a rotation plus three minutes and fifty-seven seconds.

Now a clock that kept this kind of time, sometimes going faster and sometimes slower, and having no fixed rate of variation, would be considered to be a poor time-piece for astronomical purposes. So that good clocks do not keep solar time, and no clock is intended to keep solar time, or to measure out the solar day by a fixed number of revolutions of its hands over its dial. And as we regulate all our affairs by a standard clock, the affairs of life, although having a close relation to solar time, are not regulated by solar time.

It is not correct to speak of the apparent motion of the sun, or of any heavy body, as being irregular, as all such motions are under the control of the most rigid law, and could not under the circumstances be other than they are, and we must distinguish between regularity and uniformity. The apparent motions of the sun are regular, as being subject to law (regulus), but they are not uniform since the rate of motion is not invariable. It is doubtful if any movement in nature is absolutely uniform throughout long stretches of time, and, as

said before, the rotation of a planet about its axis is probably the nearest approach to uniform motion that we have.

The difficulty with human effort along this line is, that while it can construct a time-piece that goes with a very great degree of uniformity, it is not practicable, and probably not possible, to include in its construction the complications that would be necessary to account for those variations which appear to us as irregularities in the motions of the heavenly bodies.

How then are we to reconcile the uniform motion of our standard clock with the non-uniform passage of solar time, or with the apparent irregularities in the movement of the sun?

Mean time.

If a railway train travels 90 miles in three hours we say that its mean velocity is one half a mile per minute. We do not mean by this that the train moves over exactly one half mile in each and every minute, for it necessarily goes faster on a down grade and slower on an up grade.

What we really mean is that a hypothetical train which passed over a half mile in each and every minute, moving uniformly all the while, would complete the 90 miles run in exactly the same time as the real train.

In explaining the mere motional relations of the sun and the earth during the year, the explanation is simplified by assuming that the sun makes an annual journey about the earth, instead of the earth making one about the sun. And since, as far as appearances are concerned, motion between two bodies is altogether relative, we shall, as is usually done, adopt the foregoing assumption.

Then we have a real sun moving about the earth in such a non-uniform manner as to keep solar time. This sun represents the railway train. And we assume a fictitious sun which moves around the earth with a perfectly uniform motion, giving us a day which in length is the mean of all the solar days of the year. This we call the *mean* sun, and the day given by it is a mean day, and the time that it keeps is *mean time*.

This mean sun represents the hypothetical train of the illustration.

And just as the hypothetical train will sometimes be behind the real train, and sometimes ahead of it, while never

being far distant from it, so the mean sun will be at times ahead, or in advance, of the real sun and at other times behind it, while never being farther from it, in time, than about 17 minutes.

Mean time, being measured out uniformly, is that which is kept or supposed to be kept by all domestic clocks and watches, and the commercial world may be said to be regulated by mean time.

Equation of Time.

As the mean sun is only a fiction adopted for convenience of explanation, all sun-observations for time must be made upon the real sun, or, in other words, must be in terms of solar time,; and from these we must get our mean time.

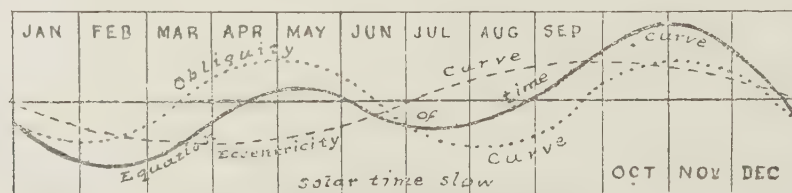
This is done by adding or subtracting a correction, as the case may be, known as the *Equation of Time*, and which is merely the difference between mean and solar time at any desired moment.

The equation is given in the British Nautical Almanac, and in other national ephemerides, for every day in the year at solar noon, together with a table of corrections by which it may be found for any time in the day.

These tables are worked out by mathematical calculation founded upon the observed motions of the earth and the sun.

The equation of time is principally the outcome of two sources of variation, one depending on the fact that the earth's orbit is elliptic with the sun at a focus, instead of being circular with the sun at the centre, and the other due to the circumstance that the earth's equator is inclined to the plane of its orbit at the considerable angle of $23^{\circ} 27'$.

If these separate variations are plotted after a manner so commonly followed by scientists and engineers, they give quite regular curves. But their union, which gives the curve of the equation of time, is a somewhat irregular curve. This is shown in the accompanying illustration.



The straight horizontal line represents the uniformity of mean time. Where a curve rises above this, solar time is in advance of mean time, and where the curve falls below the straight line solar time is behind mean time. The curve of dots represents the variation of solar time due to the inclination of the earth's equator to its orbit, and the curve marked out by short strokes represents the variation due to the eccentricity of the earth's orbit. The heavy curve is that of the equation of time.

It is seen from this illustration that solar time is slow at the beginning of the year, and gets slower until about the middle of February, when it is a little over 14 minutes slow. From this it gains up until the middle of April, when it agrees with mean time. From this on to the middle of June solar time is fast, the maximum being about 4 minutes. From the middle of June until the first of September it is slow, the greatest amount in this loop being about 6 minutes. From this on until December 22nd solar time is fast and reaches upwards of 16 minutes about November 1st. And thus solar time agrees with mean time only four times in the year; namely, on April 15th, June 14th, September 1st, and December 23rd.

Tables of the equation of time, if they are to be exact to a tenth of a second, say, must be calculated from year to year. For on account of the incommensurability of the day and the year, a zero point of the equation curve, that is, a point at which mean time and solar time coincide, although confined to narrow limits, can never fall twice at exactly the same time in the year, or at the same time in the day.

A person who attempts to regulate his clock by a noon-mark or a sun-dial, without applying the correction for the equation of time, is trying to make his clock keep solar time; and if the clock is a good one it will surely rebel at such an attempt.

Beginning of the mean day.

In the commercial and business world it has long been customary to count the day from midnight to midnight again. Astronomers, however, found it more convenient, for some reasons, to begin the day at mean noon. But, with the adoption of standard time, the astronomical usage in this respect, was made to conform to the commercial one. So that generally

speaking the mean day now begins at mean midnight, and continues until the next mean midnight.

The counting of the hours, however, is not always the same. The common usage is to count from I to XII twice over, while the astronomical usage is to count from 0 through the 24 hours to 0 again. This latter mode of counting is used also by some of the railways, as the Canadian Pacific, and it would be an advantage if it were used generally.

Thus 5 p.m. in the common notation is 17 hrs., or 17 o'clock in the astronomical one, and 12h. 45m. a.m. corresponds to 0h. 45m.

These different usages are practically made necessary by the fact that nearly all domestic time-pieces have their dials marked from I to XII, and when they strike they do so from 1 to 12, whereas the astronomer's mean time clock has its dial marked from 0 to 23, and it never strikes.

Standard time. What is known as standard time is merely an adaptation of mean time to the convenience of railway systems and the travelling public.

As one travels eastward or westward his local mean time, that is, the mean time of the locality at which he is for the moment, is continually changing, every 15° of longitude making a change of one hour in time. So, at 45° latitude, for about every $12\frac{1}{2}$ miles going eastwards his watch appears to lose one minute, and going westward, to gain one minute.

Evidently it is inconvenient for a railway running east and west to adapt its time-tables to all the different local mean times of its numerous small intermediate stations. And it is also inconvenient for the traveller to be continually comparing his watch with the time-table and making allowance for the difference between his time and the local mean time of the place at which he may happen to be.

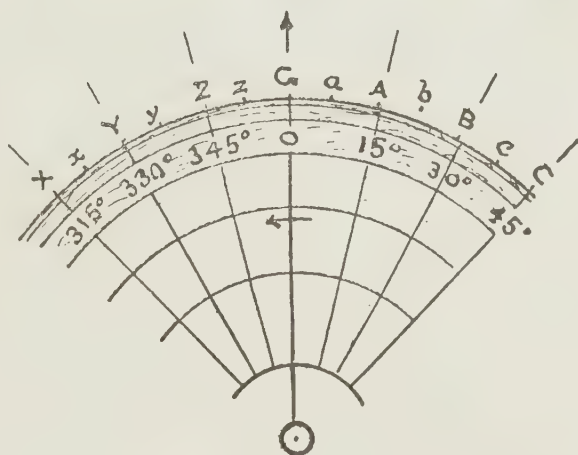
A railway such as the Canadian Pacific, for example, might make out its time-table in terms of Montreal time, and follow such from Montreal to Sarnia. This would serve the convenience of the Montreal man admirably, as his watch being set to Montreal time, is also set to railway time. But for travellers from Kingston or Toronto, with watches set to the local mean times of these cities, the case would be different, as their time-pieces would both be slower than railway time, and by different amounts.

One solution of the difficulty would be for the Kingston and Toronto travellers to set their watches to Montreal time; and a fuller solution is for both Kingston and Toronto to adopt Montreal time as their commercial time.

Of course, all the time-pieces in these two cities would have to be set forwards, but not to such an amount as to interfere with general business relations. The foregoing explains the principle and purpose of standard time, which needs now only to be put upon a scientific basis.

At the International Meridian Congress held in the city of Washington in 1884, it was agreed that the meridian of the British National Observatory, at Greenwich in England, should be adopted as the first or prime meridian, and that the standard of time of the world should be controlled by the meridians 15 degrees, or one hour apart, counting from the meridian of Greenwich.

Let OG , in the diagram, denote the meridian of Greenwich, and let OA , OB , OC , etc., be the controlling meridians, 15° , or one hour, apart. The time of OA is one hour behind that of Greenwich, and the time of OZ is one hour ahead of that of Greenwich. In like



manner the time of OB is one hour behind that of OA , or two hours behind that of Greenwich, while the time of OY is two hours ahead of that of Greenwich, etc.

Now let a , b , c , x , y , z , etc., be places or meridians half way between the controlling meridians, as represented. Then all the district between z and a adopts the mean time at Greenwich as its standard time. All the district from a to b adopts the mean time of the meridian OA , that is, one hour behind Greenwich, as its standard time. Similarly, the standard time from b to c is two hours behind Greenwich mean time, while the standard time between z and y is the mean time of the meridian OZ , or one hour ahead of Greenwich mean time, etc.

In this way the whole surface of the earth is parceled out into 24 strips 15° wide and running from pole to pole, and the

standard times of any two strips differ by a whole number of hours, there being no fractional cases.

Under this system the standard time of a place on the border, such as *a* or *b*, may be a half hour fast or a half hour slow as compared with its local mean time. But this is not thought to be a serious difficulty when all the advantages of the system are considered. For, even at the latitude of 45° , all the standard clocks mark exactly the same hour and minute, throughout an east and west stretch of about 740 miles, with a still wider stretch as one approaches the equator. And when the traveller passes from one section into the next, he is under no necessity of setting his watch anew, if he remembers that he is just one hour fast or one hour slow, as the case may be. Or if he wishes to set his watch to the changed time he moves it, backwards if going westward, and forwards if going eastwards, through exactly one hour.

This system so beautiful and easy in theory, offers some difficulties in its practical applications.

Departures from the theory have to be made in regard to certain minor points, as the change of hour is more or less dependent on circumstances.

The change cannot well be made within the limits of a city, or in the immediate vicinity of one, and it is most conveniently made at a boundary between nations or states, or along open or wild stretches of country. Thus the standard time-pieces move back one hour in passing from Windsor to Detroit, or from Sarnia to Port Huron, although this is not quite the middle line between the 5 and 6 hour controlling meridians.

Five different times, as far as hours are concerned, extend across the continent of North America, namely, Intercolonial time, Eastern time, Central time, Mountain time, and Pacific time; and Pacific time is exactly 8 hours behind Greenwich mean time.

In all of the foregoing it must not be forgotten that standard time is commercial in its relations, and not astronomical. The astronomer necessarily keeps his local mean time, since the movements of the heavenly bodies, with which he is more immediately concerned, refuse to accommodate themselves to standard time.

N. F. DUPUIS.

MODERN BRITISH FOREIGN POLICY.¹

OF the misconceptions prevalent among casual students of British policy, none is commoner than to speak of our diplomacy in party terms. The general impression is that until quite recently there were definite Tory and Liberal foreign policies; and that the battles of domestic politics involved as bitter strife over external issues. It is the object of this study to exhibit British statesmanship as dominated by forces deeper-seated and more real than the changes in public opinion; and to examine that double movement of policy, towards pacificism and non-intervention, and then, by reaction towards a vigorous and aggressive initiative, which occupied the half century from 1868 to the present year.

Ever since the Tudors reintroduced Britain into the comity of nations, British foreign policy has been marked by a regular alternation of diplomatic ideals. Elizabethan energy and intervention was followed by the pacificism of James Stuart. Cromwell's splendid audacity provoked the shameful reaction of the later Stuart reigns. Walpole relieved the strain which

¹BIBLIOGRAPHY:—

- Ashley, *Life of Lord Palmerston*: London, 1879.
Morley, *Life of Gladstone*: London, 1903.
Maxwell, *Life and Letters of the Fourth Earl of Clarendon*: London, 1913.
Newton, *Life of Lord Lyons*: London, 1913.
Fitzmaurice, *Life of Lord Granville*: London, 1905.
Cromer, *Modern Egypt*: London, 1908.
The Times History of the South African War, more especially vol. i: London, 1900-09.
Hurd and Castle, *German Sea Power*: London, 1913.
Mahan, *Naval Strategy*: Boston, 1911.
The Quarterly Review, 1895-1914, giving the Conservative standpoint.
The War, its causes and its message: speeches by the Prime Minister, August-October, 1914.
Hansard, Debates on:—
 The Japanese Treaty, 13 February, 1902.
 The vote of censure (naval affairs), 29 March, 1909.
 The Agadir incident, 27 November, 1911.
 The present crisis, throughout August, 1914.

the storm and stress of William III.'s Europeanism inflicted on Britain; and so in scientific regularity periods of intervention and aggression have followed, and been followed by periods of rest or domestic reform. Now it is quite impossible to gather from these changes evidence to prove, let us say, that the Conservatives usually advanced and that the Progressives surrendered. Whig pacifists were followed by Whig militarists. If England reached her highest point of glory under the Tories of 1815, she had fallen lowest under the Tory North; and Peel and Aberdeen, when in full communion with Tory sentiment, pursued a peace policy with as great consistency as any Liberal cabinet has done. The European situation, the presence or absence of some dominant and ambitious power on the Continent, the pressing need for domestic and financial reform in England—these things, which always refused obedience to mere party dictation, have shaped the policy of the British government, irrespective of the actual ministry in office.

Now the two latest chapters of British policy have illustrated this ebb and flow of the aggressive diplomatic instinct more clearly and decisively than has any from an earlier age. For the two most marked features of British history from 1868 to the present day have been the great reaction against diplomatic intervention, which began after the fall of the Tory ministry in 1868, and the equally definitive recovery of interest in, and influence on, European events which still remains ascendant in British statesmanship.

Our policy began its modern history, like so many other factors in British life, with the reforming ministry of Mr. Gladstone, which lasted from 1868 to 1874. The buoyant, masculine, robustious days of the Whigs were over, and Palmerston had died not one day too soon to save his credit. To the last, or almost to the last, he had held to the old traditions of Whig statesmanship. Abandoning the spirit of co-operation with Europe which Wellington and his group had favoured, Palmerston had maintained the reputation and influence gained at Trafalgar and Waterloo, by vigorous intervention on behalf of nationality and constitutionalism; and the *civis Britannicus* had never, even under Chatham, felt greater than when Palmerston stood as his protector. But times were changing. The Crimean war had revealed how little England had travelled, in military organization, since Peninsular days; and meantime

Moltke and Roon had revolutionized the science of war and of the preparations for it. As Bismarck plainly hinted, England could drop some ineffectual shells at certain points on the German coast, and could do little else. She had no army. Even her fleet was passing through a trying change, both in ship-building and gun-equipment. In those early days of the iron-clad, the fleet meant less in proportion to fortress strength than to-day, and its striking power was out of all proportion weaker. The emergence of Prussia from the shade, too, in 1866, had completely altered the Balance of Power, and had destroyed the capacity of England for acting as the decisive influence in that Balance.

"How much pleasanter and easier it was in the world of politics," said an English diplomat once to von Bülow, "when England, France, and Russia, constituted the tribunal of Europe, and at most Austria had to be occasionally consulted."¹ But those happy days had vanished beyond hope of recall.

Twice before 1865, Palmerston had found the new conditions interrupting his brisk and usually successful policy. An understanding between Prussia and Russia had prevented England from assisting Poland in 1863, and about the same time, the seizure of Schleswig-Holstein by the Central European states proved that the victor at Waterloo could no longer trust to the old diplomatic influences, even in the case of Austria. The nation, through no special fault of its own, was about to descend into a diplomatic Valley of Humiliation. Such was the international situation from which we had to start.

The pacific and non-interventional characteristics of mid-Victorian policy were accentuated by changes in domestic policy. In 1868 Britain had come on one of those times of intense concentration on social reform which, as we have seen, alternate naturally with periods of spirited foreign action. Cobden's influence was at its height—being dead, he yet spoke with an authority which he had never possessed in life. The economic argument had won the day, and had shaped opinion, perhaps a little more decisively than its merits justified. And since Victorian commerce had not, like later American enterprise, abandoned the Decalogue at the bidding of Machia-

¹*Imperial Germany*, p. 3.

velli, moral and religious sentiment allied itself with Cobdenism to keep the peace.

Two great pacific campaigns, against the Crimean war, and against infringing the rights of the United States, after 1861, had made Bright a moral influence, even in the camp of the enemy (Disraeli was one of his admirers); and Bright's eloquence, reinforced by Cobden's economics, presented an awkward barricade for the militarists to force. At the critical moment, Russell resigned from the leadership of the Liberals, and W. E. Gladstone, the disciple of Cobden and Bright, the most hyper-conscientious politician in Britain, and a financier who always understood better how to economize than to venture on brilliant experiments in national speculation, came "unmuzzled" into possession of supreme power. After 1868, he might have to face troubles with Queen, peers, and bishops, but he had a majority of over a hundred behind him; the people were conspicuously friendly; and half a hundred reforms, postponed to allow for imperial or European experiments, clamoured for attention. Had there been no other voice but that of Ireland, it must have been the duty of the new government to halt, and, listen and reform.

When Bagehot, in 1870, wrote a eulogy of Lord Clarendon, recently deceased, he was unconsciously describing and justifying the foreign policy which prevailed in England, except in one short blazing episode under Beaconsfield, for twenty years. "We wish," said Bagehot, in justification of Clarendon's lack of system, "that foreign nations should, as far as may be, solve their own problems; we wish them to gain all the good they can by their own exertions, and to remove all the evil. But we do not wish to take part in their struggles. We fear that we might mistake as to what was best; we fear that in so shifting a scene we might find, years hence, when the truth be known, that we had in fact done exactly the reverse of what we meant, and had really injured what we meant to aid."¹ It is an interesting justification of the critic's shrewdness that the great exception to the rule of non-intervention, which Beaconsfield's Eastern policy presented, has since been criticized by a Conservative writer as a false step, painfully atoned

¹Bagehot, *Biographical Studies*, p. 349.

for by later Liberal and Tory cabinets. The men who guided Britain through the period of calm make a not uninteresting study in character. Three out of four of them were Liberals, of the older Whiggish or Peelite school. No mistake can be greater than to assume that the Liberal ministries intrusted their diplomacy to rash and enthusiastic Radicals. In truth, the aristocratic touch has been more conspicuously present in Liberal than in Tory policy. Foremost, at the beginning of the period, came Clarendon, the very model of English chivalry and courtesy—suave, a *persona grata* to half the courts and ministers of Europe, still able in days of blood and iron to work changes by the old personal influences which Bismarck was sending to the shades. Old and new met in the conflict in which Clarendon grappled with Bismarck concerning disarmament, just before the French war; and if Bismarck found Clarendon's case unconvincing, he remained for long uncertain whether he would be able restrain the influence of the English minister. "Never in my life," said he with clumsy German geniality, to Clarendon's daughter, "was I more glad to hear of anything than of your father's death. . . . If your father had lived, he would have prevented the war."¹

Clarendon's death in 1870, handed on his office to Granville, as sound a Whig, as accomplished a courtier and clubman, and as perfect an aristocrat as his predecessor. It was not Granville's Liberalism which made him a pacifist and advocate of non-intervention. It was partly the force of circumstances, partly the fact that he belonged to the old, gentlemanly, pre-Bismarckian world, and that, like his class, he took unkindly to the hurry, the storm and stress, and the brutal directness of the bad, new times. In his *Modern Egypt*, Lord Cromer, whose fortunes led him to belong to the later, not the earlier school of policy, has sketched in a few sentences the typical diplomatist of mid-Victorian times. "His light touches on serious questions were inimitable," he wrote of Granville. "His good humour and kindness of heart come out in every line he wrote. It was possible to disagree with him, but it was impossible to be angry with him. It was also impossible to get him to give a definite answer to a difficult question, when he

¹Maxwell, *Life of Clarendon*, ii, p. 366.

wished not to commit himself. His power of eluding the main point at issue was quite extraordinary. . . . With a smile and a quick little epigrammatic phrase, Lord Granville would elude one's grasp, to be off without giving any opinion at all. . . . Unfortunately, he fell on times when, under the auspices of Prince Bismarck, a directness, I might almost say a brutality, had been introduced into European diplomacy. Lord Granville always seemed to me to make the mistake of confounding the cases in which the dawdling *laissez-faire* policy was wise, with those in which it was necessary to take time by the forelock and have a clearly defined policy at an early date."¹

Of the two remaining personal influences of these years, Gladstone and Salisbury, criticism for the present may be deferred.

The policy of the pacific period falls under three heads—imperial, continental, and, if I may use the phrase, moral, meaning by this the relation of policy to international ethics.

A host of transactions connect themselves with imperial considerations. The full tide of the *laissez faire* theory was running in colonial matters, and Conservatives were almost as willing as Liberals to let the colonies go to the devil by their own road. Nevertheless, the expansion of empire was carrying statesmen before it, whether they would or not, and a new diplomacy of Empire was springing up. It is perhaps the gravest accusation which one can bring against Liberal statesmanship after 1868, that it failed to understand and master those problems in world-policy, on which so much of the future was to depend. Throughout the whole period, the relentless progress of Russia in Central Asia was preparing trouble for Britain in Afghanistan. No doubt Beaconsfield's Afghan policy asserted English rights in Central Asia, but that policy, like so much else in Beaconsfield, was peculiar to himself, and alien to Conservative as well as Liberal traditions. About 1880, Skobelev was in his brief ascendant, and the desert Khanates crumbled into dust before the Russian attacks. Merv was occupied, strategic railways were pushed nearer India, and the Penjdeh episode as nearly as possible flung Russia and England into war. The only answer which

¹Cromer, *Modern Egypt*, i, p. 392-3.

a non-imperialist England could make was something very like surrender. In the later years, too, Bismarck, acting for the new German colonial party, forced England to recognize Germany in Samoa, New Guinea, and at half a dozen points in Africa; and the Berlin act of 1885 remains a standing proof that in the opening stages of the new colonizing age, England did little more than maintain her old position, and agreed to dangerous aggrandizement on the part of her rivals. Even after the Liberals fell, Tories, faced with a similar problem in China, played the same ineffectual game, and seemed to have lost the old imperial trick.

It is true that those were the first days of the Egyptian occupation; but never did ministers have glory so unwillingly thrust upon them, as Gladstone and Granville, when Gambetta's fall left them in solitary grandeur to maintain stable government in Egypt in the face of Arabi Pasha's rising. They did not wish for Empire; they were unwilling to pay the price it cost in plans and permanent responsibility; so England stumbled blindly into the most momentous expansion of her power of the last half century.

Throughout these same years, England was forced by various tremendous European events to define her new European position. That she did, with one notable exception, by proving that she had practically no influence on events.

At the beginning, Napoleon III., with a curious recklessness of conduct towards England, his old ally, and present friend, trafficked with Bismarck over Belgium as though England had never pledged herself to stand fast for Belgian independence. When war between France and Prussia drew near, not even the charms of Clarendon's friendship could convince the Prussian leaders that disarmament was possible. In the actual war of 1870-71, the British government occupied that position of inglorious judiciousness which the United States at present holds, and, like that country, drew on herself the ill-will of both combatants. But it was reserved for Russia to illustrate and drive home with special emphasis, the impotence of British diplomacy in Europe during the transition period. Bismarck, suffering as he always did, from nightmares concerning coalitions, and regarding Russia as his greatest potential enemy, bought Gortchakoff's neutrality in 1870 by allowing the Russian statesman to tear up the treaty

of 1856, by which Britain had shut Russia off from free use of the Black Sea. In the negotiations which followed it is undoubtedly true that Britain forced Russia to accomplish her purpose formally, and before a European Conference. It is also true that, in the conference, Russia consented to the useful proposition that "it is an essential principle of the law of nations that no power can liberate itself from the engagements of a treaty, nor modify the stipulations thereof, unless with the consent of the contracting powers, by means of an amicable arrangement."¹ But diplomatic forms cannot conceal the sense of defeat and impotence, which left the victors of the Crimean war stripped of the fruits of their old victories by one bold stroke on the part of Russia.

Yet there were compensations even in those years, and even in Europe. Gladstone had inherited the old Whig love of nationality, and European constitutionalism. He had been a good friend to Italy, and his love of smaller peoples and their freedom made the period of abstention and humiliation less melancholy than it might have been. His first opening came in Belgium. It is a pleasant memory from a time when England seemed crippled in Europe, that Gladstone pledged his government and country to defend Belgium against attack. "If the Belgian people," he wrote to Bright, "desire, on their own account, to join France or any other country, I for one will be no party to taking up arms to prevent it. But that the Belgians, whether they would or not, should go plump down the maw of another country to satisfy dynastic greed, is another matter. The accomplishment of such a crime as this implies, would come near to an extinction of public rights in Europe, and I do not think we could look on while the sacrifice of freedom and independence was in course of consummation."¹

With a love of nationalism equally resolute he fought Turkey and Beaconsfield on behalf of the young Balkan states. It is possible now to see that that diplomatic passage at arms entitled by its chief hero, "Peace with Honour," was really not merely the most useless exhibition of English statesman-

¹Fitzmaurice, *Life of Granville*, ii, p. 76.

¹Morley, *Life of Gladstone*, ii, p. 342.

ship of the century, but the root of all the troubles which have since afflicted the Balkan states, and in a sense a contributory cause of the present war. On the other hand, whether from the moral, or the purely selfish point of view, Gladstone's policy on the Eastern Question, recognizing as it did the incontrovertible facts of Balkan nationhood, was as sound as that his great rival was a diplomatic cloud-palace, fabricated out of fantastic miscalculations. For the time Gladstone, being in a minority, was helpless, but in 1880 and 1881 he was able, as prime minister, to win for Greece and Montenegro better terms, and to prove that his love of liberty was something, not of words and eloquence, but fundamental to his working practice.

The chief and most characteristic victory of the transition period came in the Washington Treaty of 1871, and the Geneva Arbitration of the following year. It is hardly too much to say that these two acts effected the most heroic innovation in recent diplomacy. Relations with the United States had grown terribly bitter throughout the "sixties." Whether in Canada, Britain, or the States, grievances were accumulating. Between Canada and her neighbour there were boundary disputes, fisheries disputes, troubles inherited from the Civil War or the Fenian raids, and jealousies and spites created by commercial difficulties and the termination of Elgin's Reciprocity Treaty. But the crowning cause of trouble embittering Britain in her relations with America was the Alabama business with the allied troubles springing from the war. Clarendon had known what was coming; indeed, one of his latest letters jokes grimly over threatening troubles: "I have been operated upon by Motley, and, as I had no chloroform, it was not pleasant. He read me a despatch of twelve sheets on the Alabama mess; and though it was most courteous in tone, it reopened the whole case in all its details from the very beginning, and reproduced all the old disputed facts and answered arguments, as if it was brand new material. . . . My impression is that we are further than ever from settlement and that a heap of trouble is oncoming."¹ It is not necessary to describe the details of the negotiations at Washington, or of the endea-

¹Maxwell, *Life of Clarendon*, ii, p. 362.

vours at Geneva, by the English to keep their tempers, by the Americans to restrain their natural inclination to snatch unfair advantages. The net result was that with a frank abandon very uncommon in international affairs, Great Britain expressed her regrets for past carelessness, and submitted to arbitration one of those points of honour which, according to conventional opinion, lie outside the scope of arbitration treaties. In his biography of Gladstone, Lord Morley uses language not one whit too strong when he says: "The treaty of Washington and the Geneva arbitration stand out as the most notable victory in the nineteenth century of the noble art of preventive diplomacy, and the most signal exhibition in their history, of self-command in two out of the three chief democratic powers of the western world."¹

The first slow movement in the formation of British policy has now been described. In a period in which no diplomatist less than the very greatest could have done much for England, the country had managed to evade any obvious and dangerous disgrace. Some domestic reforms had been accomplished, one of them the beginning of the reconciliation of Ireland. Britain had naturally receded from European affairs in many of which she had no vital interest, and in all of which intervention at that stage would have brought her weakness, not strength. Her moral influence still counted for whatever that evasive article may count; her defence of European nationalism gave her a certain superiority of standard; and towards the United States her statesman had acted with largeness of view and foresight. The one really unfortunate and preventible characteristic of the Gladstonian regime lay in the singular incapacity of Mr. Gladstone to acknowledge the existence of awkward facts without attempting to prove that they did not exist. Lord Cromer's verdict on the most famous of all Gladstonian failures, the expedition to Khartoum, is likely to be that of posterity on the diplomacy of his government. "The Nile expedition was sanctioned too late, and the reason why it was sanctioned too late was that Mr. Gladstone would not accept simple evidence of the plain fact. . . Mr. Gladstone's error of judgment in delaying too long the despatch of the Nile

¹Morley, *Life of Gladstone*, ii, p. 413.

expedition left a stain on the reputation of England, which it will be beyond the power of either the impartial historian or the partial apologist to efface.”¹

But the transition period thus far described constitutes only the introduction to modern British policy. England had required leisure in which to make necessary domestic reforms. Europe had changed, and it was important for England to cancel her old connections, and readapt herself to changed conditions. In the meantime a new epoch in diplomacy had arisen, in which *Weltpolitik* took the place of the simpler purely European system; in which the forces involved were tenfold more powerful than in earlier days, and the dilemma of diplomacy might not unfairly be described as “world-power or ruin.” Here, as in the earlier period party distinctions sink into insignificance; the dominating forces are the inevitable changes and developments outside England, and in part outside Europe. Nevertheless, it is but just to admit that the pioneers of the new policy were Conservatives, and that recent Liberal statesmanship has followed in the trail blazed for it by Conservative forerunners.

It would be a misjudgment to attribute the change to that last of the great Tories, Lord Salisbury. With all his eminent qualities, Salisbury was as much a man of the transition stage as Gladstone, or Granville, or Clarendon. With truth as well as wit, he has been called a Little-Englander—Empire on modern lines being too radical a fact for him, as indeed was also the storm, stress and brutality of modern German diplomacy. Like his Liberal rival, he has been accused of making graceful concessions, whether in Siam, or Heligoland, or China. Bismarck’s famous epigram, “a lath painted to look like steel,” could never have been applied to men of the new type like Chamberlain or Grey; and it is curious to find one of Crispi’s envoys writing: “He belongs to the type of timid Englishmen.”¹ The new world was a changed place from the reserved arena wherein the old school had played at being gentlemen, and had attempted to eliminate rude forces, or per-

¹Cromer, *Modern Egypt*, ii, p. 17.

¹Crispi, *Memoirs*, ii, p. 457.

sonalities like Napoleon, who insisted in driving home the argument of force.

It will be impossible to describe in detail the vast developments of modern diplomacy; one can only indicate the predominant factors.

First and foremost came trade in its modern aspect, and the corollary of trade, colonization. For at least thirty years we have been engaged in just such a struggle for commercial and colonial supremacy, as England and France waged in the eighteenth century. Now the field is the world, and the weapons, the latest tariff refinements and a new kind of imperial Machiavellism. Examples might be taken from every region in the world—even from South America, where the United States uneasily quotes the Monroe Doctrine, and tries to trust in Providence. But British action has been most conspicuous in Africa. There the new diplomatic world-forces drove England into two critical situations. The first of these occurred in South Africa. It was the beginning of 1895 when the Kaiser “declared that the Transvaal was being trodden upon by one great power, and therefore naturally sought protection from another.”¹ That year was indeed a decisive year, for it saw the chief initiator of the new policy obtain a position of influence. Curiously enough, it was a member of a party not usually connected with empire and foreign policy who began the change. As early Victorian Radicals taught Britain imperialism, the greatest of modern Radicals forced her to face her new diplomatic responsibilities. In 1895, Joseph Chamberlain became Colonial Secretary, and since the new diplomacy was something broader than Foreign Office regulations suggest, and since trade and colonization were among its most vital issues, the new Secretary of State found himself at the strategic centre. The pace quickened in Britain; the punitive expeditions, which fret the administrators of all colonies, began to be regulated and driven home with new vigour; and the South African war, which was really a war as much for world-power as for South African expansion, and which grappled Germany in the person of Kruger, proved that there was at least one statesman alive to the new issues, and ready to meet

¹*Times History of the War in South Africa*, i, p. 150.

their onrush. But long before the South African war had settled that particular problem in *Weltpolitik* Cromer and Kitchenner had faced and ended another. Whatever the value of the "Cape-to-Cairo" idea, it at least stood for a bold claim to dominate the trade and government of a large part of Africa, and the control of Equatorial Africa strengthened the hands of England in Egypt. Only once since Fashoda have world interests of two great powers come so decisively and frankly into opposition, and it is to the credit of the English policy that the victor at Fashoda was victor also at Agadir.

Assia, west, middle, and east, has afforded another sphere for the new world policy: and the motives operating there have extended beyond the commercial considerations which dictated African policy. Imperial issues, with life and death involved in them, drew Europe into Asia. From Arabia and the Persian Gulf, to the Pacific Ocean, "world-power or ruin" was the keynote of the conflicting policies.

As she emerged from the Gladstonian regime, Great Britain found her early predominance in Asia not merely disputed, but even shaken. It is true that the occupation of Egypt had made her careless of the fate of Constantinople, and secure in her hold of the way to India. But the Russian advance in the middle East was still continuing; and it seemed as though the control of Britain over the fate of China had been lost for ever. The seizure of Port Arthur and Kiao-chau, marked the advance of Russian and German claims to predominance in the far East. Space forbids an examination of the successive steps in policy which, in 1904, confirmed the British occupation of Egypt by a convention with France, and which in 1907 settled the outstanding issues with Russia in a sense not unfavourable to Britain. The master stroke of policy, however, came in the Japanese alliance of 1902. In his exposition of that famous agreement in Parliament, Lord Cranborne defended it as a guarantee of the *status quo*. "It was the *status quo* which we desired to maintain, and that *status quo* is more particularly described in the opening words of the agreement, the maintenance of the open door, and of the territorial integrity of China."¹ But the treaty had infinitely farther reaching con-

¹*Hansard*, 13 Feb., 1902.

sequences. It established a new and unchallengeable balance of power in the East, based on the possession of sea-power. It thrust Russia back for the first time from China. It has finally quenched German hopes of an Eastern Empire. It was the one possible answer to countless difficulties which were ruining English policy in the East, and it was so complete that no counterstroke has been possible. Its natural sequel was the Anglo-Russian convention of 1907, and the erection of Britain once more into her old position as the first of Asiatic powers.

It has been necessary to deal with outlying regions first, because the new diplomacy was essentially *Weltpolitik*, and manifested itself in the beginning, not at the centre, but at the circumference. But it soon became apparent that, as of old, the battle must be fought and won in Europe; and that there issues of appalling magnitude were developing. Bismarck had already accomplished the greatest of all diplomatic revolutions on the continent. He had banished for ever the tangle of undefined ends and polite mystifications, and half-hearted efforts, which Metternich and his kind had called statesmanship. It was now no longer necessary to conceal the brutality, or the lack of moral quality, in the new national or racial policies. To accomplish these ends, blood and iron had now been organized into an Armed Peace, more formidable than Napoleon's greatest efforts in war, and it was now permissible to provoke hostilities when war seemed useful to the national programme. Partly no doubt because of the French desire for revenge after 1871, but much more directly because German diplomacy was aggressive, and because the Triple Alliance and the Germany army provided it with weapons, Europe passed into the gloom of a perpetually threatening storm of war. What part should England take in the new Europe—intervention or splendid isolation?

There had been days when England had condescended to join with Europe. The basis of the treaties of 1815 lay in the Austro-British alliance; and not all Metternich's autocratic intrigues could end that amiable relationship. Whigs and Tories alike had favoured the cordial understanding with France under her Orleanist King. The friendship had deepened under Napoleon III. into an alliance, fitful but useful to both France and Britain. When the French Empire fell, a cer-

tain friendliness with Germany had sprung up. Beaconsfield profited by it at Berlin in 1878, and even the Liberals were granted a Bismarckian benediction when they undertook to settle Egypt. Salisbury, too, coquetted with some kind of understanding, under cover of which Heligoland passed into German hands.

All these unions and understandings, however, belonged to the old ineffectual, obsolete world. After the German flood had fallen to its normal level, the patriarchs who emerged from the British ark, inclined to linger round their stranded craft, and enjoy the solitude which they dignified with the name of splendid isolation. But *Weltpolitik* forbade isolation. In the new world, forces played across Europe which had implicit in them consequences terrifying to common statesmanship; and whatever the chances of world-power were, ruin was the certain fate of the isolated nation. The actual details of the new British policy are too well known to require description. An extraordinary series of lucky chances, or, as I should prefer to put it, a coincidence of admirable daring and skill with good fortune, assisted England here, as in the other regions of world politics.

Von Bülow may be over-laudatory, for diplomatic purposes of his own, but there is truth in his verdict: "The policy of no state in the world is so firmly bound by tradition as that of England; and it is in no small degree due to the unbroken continuity of her Foreign Policy, handed down from century to century, pursuing its aims on definite lines, independent of the changes of party government, that England has won such magnificent successes in international politics. The alpha and omega of English policy has always been the attainment and maintenance of English naval supremacy. To this aim, all other considerations, friendships as well as enmities, have always been subordinated."¹ It has been too long the fashion to decry the value of British statesmanship, as, for example, when Canadians grew angry because the United States acquired some few square miles of Alaskan wilderness. *Securus judicat orbis terrarum*, and it is the opinion of the leaders in our modern diplomatic universe that British policy has accom-

¹Bülow, *Imperial Germany*, p. 21.

plished something. To that the Triple Entente and the consequences flowing from it bear witness.

In 1904, the mutual troubles and disputes which had for thirty years weakened the international positions of France and Britain ended in the Anglo-French Convention. Three years later a similar settlement with Russia gave Britain a clear field in India, while her Pacific flank was safeguarded by the Japanese alliance. The faults of French administration, the over-frequency of her ministerial changes, and the combination in Russia of military defeat with domestic revolution prevented the full effects of the Triple Understanding from being realized at first, and gave Germany what may well prove to have been her last solid triumph on the old basis, in 1908, in the Bosnian affair. Then the new engine of diplomacy struck home. It settled the Agadir crisis in 1911 without war; it controlled the Balkan situation in such peace as was possible, till 1914; it ought to assist towards the creation of a renovated Europe after 1915.

These results, however, require something more potent than skill in treaty-making, and peaceful argument. Modern diplomacy demands for its victories efficiency in government, and adequate military and naval preparation. There must be a state girt for action, and weapons ready to strike the blow.

As late as 1911, Captain Mahan cherished doubts of the capacity of the British government to stand the strain. "It seems," he wrote, "as if the national life of Great Britain were waning at the same time that that of Germany is waxing. The truth is, Germany, by traditions of two centuries, inherits now a system of state control, not only highly developed, but with a people accustomed to it—a great element of force."¹ Gloomy prophets foresaw ruin in the recent social revolution. The failure of the Territorial scheme suggested that the government and the nation were alike impotent. Faction rose, and civil war was spoken of. It would be foolish optimism to say that those fears were baseless, or that British democracy has proved its superiority to Continental autocracy as a method of government. Yet two great innovations took something of the reproach from popular government. Mr. Balfour's Com-

¹Mahan, *Naval Strategy*.

mittee of Imperial Defence, with its sequel of systematic staff work on imperial problems, has proved that a people may develop the system and forethought which seemed monopolies of despotic chancellories. At the same time party, which is the essence of domestic government, was discovered to be out of place in external policy; and the process of creating stable and consistent programmes in naval and diplomatic matters, prepared the way for that banishment of party spirit in 1914, which is the best proof of the fitness of the people to rule. At present it is not all certain that even for war purposes despotism is the proper instrument of government.

But the pessimists cherished another doubt that reached still deeper into the heart of things. Faced with a Europe which had accepted the Armed Peace, was England willing to prepare in peace an engine ready for succesful war? Here, more than in any other department, Gladstone had held Britain back in her preparation for the future. As in social legislation he had attempted to save England from her social evils by the simple heroic remedies of financial economy and free-trade, so in the fleet and army he had removed some obvious abuses, through Cardwell's reforms, and then systematically starved the services. He had something of the splendid Quixotry of the first Free-Traders, trusting the reason and the humaner instincts of mankind. Like the sober and industrious apprentice, he was inclined to measure his success, not by the experiments made and the risks taken, but by the quieter satisfactions of a savings bank account with a steady credit balance.

Moral reformers, such as he and Bright were, forgot that the influence of England owed at least something of its force to Trafalgar and Waterloo; and that even Gladstonian nationalism borrowed strength from lingering echoes of Palmerstonian threats. It seems certain that no revival in the region of diplomacy could progress until the whole basis of British armed power had been altered. Until August, 1914, Britain did not anticipate the need for a national army after the continental fashion. Her Committee of Imperial Defence had thought out the various possibilities in the strategy of Empire. Her Indian frontier seemed safe—safer after the new Japanese treaty involved Japan in its defence. Her home shores were guaranteed free from invasion. Her Territorial force had been organized as a skeleton army readily developed into something

more serious, and her Officers' Training Corps were beginning to provide the reserve of officers essential in time of war. An expeditionary force capable of being expanded to include four army corps was perfected, and arrangements made for transport to the Continent within a fortnight from the start of war. Yet none of these reforms touched the real weakness. For practical purposes England was still without an army of the Continental type, and so she remained till 1914.

But the rectification of the British position came through the navy, and certain fundamental changes there. On the sea Germany had once more acted as pacemaker for the world. The teachings of Captain Mahan had proved to the Emperor that sea-power was world-power; and he determined to alter the contemptible status of the German navy. With Admiral von Tirpitz as his right hand man, he set himself, as Bismarck had done in military matters, to create a fleet worthy of German ambitions. Although the Navy Act of 1900 has long since become obsolete, the memorandum which accompanied it must remain important: "To protect the sea-trade and colonies of Germany," ran the words, "there is only one means: Germany must have a battle-fleet so strong that, even for the adversary with the greatest sea-power, a war against it would involve such dangers as to imperil her position in the world. For this purpose it is not absolutely necessary that the German battle-fleet should be as strong as that of the greatest naval power, because a great naval power will not, as a rule, be in a position to concentrate all its striking forces against us. But even if it should succeed in meeting us with considerable superiority of strength, the defeat of a strong German fleet would so substantially weaken the enemy that, in spite of a victory she might have obtained, her own position in the world would no longer be secured by an adequate fleet."¹ The importance of these words, and of the attitude they represented, was that they drove Great Britain into the creation of a fleet, unique as a force, not simply on the sea, but for diplomatic purposes. It is no exaggeration to say that the challenge to her sea-power led England away from the petty satisfaction of arithmetical comparisons with her rivals, to

¹Hurd and Castle, *German Sea Power*, pp. 121-2.

create an aggressive fighting machine more influential than anything in modern history, save the armies of the young Napoleon, or of Moltke at the top of his strength. Many elements have gone to the making of Lord Fisher's fleet, but the "central verities" are three — guns which outmatch all others on the sea, and most on land; ships which reduce all previous capital vessels to playthings; and a system of naval strategy bold enough to leave the extremities, and concentrate at the heart. The strategy, the ships, and the guns have dominated the situation ever since a Conservative government allowed Sir John Fisher to work his will. Their efficacy was finally asserted last autumn, when, after a month's comparatively peaceful manoeuvring, British maritime supremacy became an accomplished fact as in the days of Nelson and St. Vincent. Behind empire and diplomatic success there has always been some such machine—fleets like those of Drake, or Blake, or Nelson; armies like those of Turenne, or Napoleon, or Moltke. So to-day the renaissance of British prestige and influence has progressed in exact proportion to the renaissance of British naval power. Von Bülow was right when he said that *the fleet* was our national policy.

To summarize this strange development, which most of us have watched without vision and without understanding. Within the last twenty years, the diplomatic position of Britain has suffered a revolutionary change. Passing naturally, and not always consciously, from the Gladstone-Granville regime, Britain has gradually become possessed of a foreign policy more effective than any in her past history. Imperial statesmen, earliest among them Chamberlain and Rosebery, flung her into the responsibilities of imperial and colonial diplomacy, and with the one hesitation of the earlier months in South Africa, she has progressed without faltering. Her Indian army is more soundly organized, and her Indian position more scientifically thought out than at any earlier period. Her fleet has become an instrument of world-power equal to its great responsibilities. Her European relationships are sound enough to safeguard her interests; not too strictly defined to prevent change, should change prove necessary. And now she has a great army.

In this change, Britain may seem to have yielded to temptation and to have forgotten the earlier idealism which lent to

Gladstonian Liberalism the few gleams of diplomatic glory which belonged to it. "Sound and justifiable egotism," is von Bülow's phrase for our chief characteristic.¹ But forethought and shrewdness do not necessarily exclude the more unselfish virtues. The truth rather is that international unselfishness is never sounder than when linked up with healthy self-regarding policy. It is not only possible to make the best of both worlds; in a well-planned universe nothing else ought to be possible. The new diplomacy has culminated in a war, wherein obvious British interests are pursued—the protection of certain European shores necessary to our safety, the maintenance of an advantageous *status quo* through the continued existence of France. Our trade must be safeguarded, our national and imperial existence preserved. Yet it is also true that never so completely as to-day has the entire population risen *en masse* to protect a little state. Treaty rights and international faith have received a definitive sanction from our British action; and the new diplomacy, should all go well, will reach still higher, when Mr. Asquith and Sir Edward Grey push on through peace to build their commonwealth of Europe. This essay could not conclude more fittingly than with the words in which Mr. Asquith outlined the latest phase of the new development: "I should like to ask your attention to the end which, in this war, we ought to keep in view. Forty-four years ago, at the time of the war of 1870, Mr. Gladstone used these words: 'The greatest triumph of our time will be the enthronement of the idea of public right as the governing idea of European politics.' Nearly fifty years have passed. Little progress, it seems, has as yet been made towards that great and beneficent change, but it seems to me to be now at this moment as good a definition as we can have of our European policy. The idea of public right—what does it mean when translated into concrete terms? It means, first and foremost, the clearing of the ground by the definite repudiation of militarism as the governing factor in the relation of states, and of the future moulding of the European world. It means, to-day, that room must be found and kept for the independent existence and the free development of the small nationalities,

¹Bülow, *Imperial Germany*, p. 21.

each with a corporate consciousness of its own. Belgium, Holland, Switzerland, the Scandinavian countries, Greece, and the Balkan states—they must be recognized as having exactly as good a title as their more powerful neighbours—more powerful in strength and in wealth—to a place in the sun. And it means, finally, or it ought to mean, perhaps by a slow and gradual process, the substitution for force, for the clash of competing ambitions, for groupings and alliances and a precarious equipoise, of a real European partnership based on the recognition of equal rights, and established and enforced by a common will.”¹

The ideal expressed in these sentences seems to connect the earlier and the later phases of our modern policy. That policy began in a whole-hearted effort to free Britain from outworn and troublesome connections. If the operation weakened Britain in many material directions, it at least gave moral considerations space in which to expand. A time came when new connections, rendered necessary by new and grave dangers, had perforce to be made. But they, too, will prove mere temporary aids, turning easily into obsolete obstructions, and once more those few simple maxims of international right which have never long been absent from the minds of British statesmen will resume their sway, and Peace with Honour, in a sense that Beaconsfield was incompetent to understand, will become the dominant maxim of *Weltpolitik*.

J. L. MORISON.

¹Mr. Asquith's speech at Dublin, 25 Sept., 1914.

QUEEN'S AND THE WAR.

5th Field Company of Engineers.

The 5th Company of Canadian Field Engineers, Queen's University, was formed more than four years before the war under the guidance and inspiration of Major Macphail, Professor in Civil Engineering, who is now serving in Northern France, ably assisted by Captain (now Major) Lindsay Malcolm, Assistant Professor of Civil Engineering, now with his men at Ottawa waiting to go forward as part of the Second Canadian Contingent. The scheme, backed by the personality of its sponsors, soon secured the hearty support of the Science students and each year has seen an increased interest in the drill and welfare of the Company. It was and is the only purely University Company in Canada that has regular standing with the Militia Department.

Each spring the members put in their period of camp duty and then scattered to pursue their summer's work. This routine was carried out last year as usual.

When the war broke out Major Macphail and his officers set to work. The post, the telephone and the telegraph system, all were employed. Men were called from all the four corners of the continent and in a few days the Engineers were at Valcartier, ready for any duty that might fall to their share.

The practical professional training of the officers and men now stood them in good stead. A vast amount of work had to be done to prepare for the mobilization of 30,000 men. The camp had to be laid out, drained and practicable roads made. Very ably was this work performed by the Queen's Engineers, *one hundred and seventy in number*, and the health of the camp was largely due to their untiring efforts.

When the call came for volunteers for active service *fifty* of our students offered their services and sailed for Europe in September, under command of Major Macphail. These are now on duty in France and rendering a good account of themselves. The rest came back to Kingston and took up their residence in the barracks here. The Company then was brought up to its full strength by the enlistment of other students, and by the return of graduates who had failed to receive their summons in the first instance.

When the call came for the second contingent the Engineers were asked to supply a half company, 80 officers and sappers and 30 drivers and mechanics. These also were forthcoming and on December 31st were drafted to Ottawa, preparatory to their journey across the seas. These now form the right half of the 6th Provisional Company Engineers, Second Canadian Expeditionary Force. With them went Captain (now Major) Lindsay Malcolm and Captain Douglas Ellis, and Lieutenants Manhard, Baker and Earnshaw.

The work of this Company has been so highly appreciated that we understand that a number of universities in the United States have formed companies on the same basis amongst the students of their Science Faculties.

Army Medical Corps.

As soon as men were called out for the First Contingent Lieut.-Colonel Arthur E. Ross, Professor of Materia Medica and Pharmacology, who had served in South Africa, offered his services and after some weeks at Valcartier went with the Force as Commanding officer of No. 1 Field Ambulance. He was accompanied by Capt. Dr. Graham (Clinical Assistant at Rockwood), Capt. Dr. Stone (House Surgeon, Hotel Dieu), and seven Medical undergraduates.

Capt. J. F. Sparks, Assistant Professor in Anatomy, is Medical Officer of the 21st Battalion, Second Canadian Expeditionary Force. In the Naval Medical Service are Dr. Harty and Dr. Martin, and in the Red Cross Service in France Dr. Kennedy and Dr. Harry Gray.

When the call came for dressers and other assistants for the Duchess of Connaught Hospital at Cliveden, thirty men from among those at Queen's responded, 21 graduates and 9 undergraduates. In the case alike of the engineering and of the medical students, the University granted their degree to those of the graduating class and their year standing to those of other classes without further examination.

Further, the Imperial Government has accepted from Queen's University the offer of the personnel of a Stationary Hospital of 200 beds, to be known as No. 5 Stationary Hospital (Queen's), Canadian Expeditionary Force. The commanding officer will be Major Etherington, and the total strength, including 35 nursing sisters, will be 129.

Canadian Officers' Training Corps.

This Corps was organized at Queen's last November, although many of the Arts students and members of the Staff carried on voluntary drilling from the opening of the Session.

The membership of the Corps is almost exclusively confined to students of the Arts Faculty, as the Science students for the most part join the 5th Field Company of Engineers and the Medical students have offered their services for ambulance and hospital work. Lieut.-Col. A. B. Cunningham, a graduate of Queen's, was appointed O. C., and Capt. P. G. C. Campbell, Professor of Romance Languages, was appointed Adjutant.

A battalion over 250 strong was sworn in and drills, lectures and tactical schemes have been carried on. Most of the members of the Corps are qualifying for Subaltern's rank and about a dozen are qualifying for Captain's rank. A large percentage of the members had already had training in various branches of the service.

At the time of writing the project is mooted of organizing a company for Overseas Service composed entirely of Queen's men, or of joining a company composed entirely of men from the various universities of Canada. All the members have been drilling a minimum of five hours a week, and in most cases have been averaging nine to ten hours a week.

Much should be said of the enthusiasm shown by all members of the Corps, in view of the exceptional difficulties encountered throughout the Session; no uniforms could be procured; there was a great shortage of drill books, some, indeed, could not be procured at all, although the examination is based on them; rifles were not obtained until the end of January; and the Government was unable to provide any ammunition for rifle practice, and it had to be bought privately.

The following members of Queen's Staff are on active service:—

D. S. Ellis, Assistant Professor in Applied Mathematics, Lieutenant 6th Field Co., Canadian Engineers, Second Canadian Expeditionary Force.

F. Etherington, M.D., Lecturer in Surgery, Major A. M. C., Deputy Assistant Director of Third Division.

L. F. Guttman, Assistant Professor Chemical Engineering, Captain 2nd Bat., 1st Brigade Infantry, First Canadian Expeditionary Force.

L. Malcolm, Assistant Professor Civil Engineering, Major 6th Provisional Co., Engineers, Second Canadian Expeditionary Force.

A. Macphail, Professor Civil Engineering, Major 2nd Field Co., Canadian Engineers, First Canadian Expeditionary Force.

A. E. Ross, M.P.P., Professor of Materia Medica and Pharmacology, Lieut.-Colonel A. M. S., No. 1 Field Ambulance, First Canadian Expeditionary Force.

J. F. Sparks, Assistant Professor in Anatomy, Captain A. M. C., Medical Officer of 21st Battalion, Canadian Expeditionary Force.

Lee Harrison, Lecturer in French, at present serving with the army in Northern France, as interpreter.

Including those in the Army Medical Service, there are at present from Queen's in the First and Second Contingents 16 officers and 185 men. On the proposed staff of Stationary Field Hospital, 129. In addition, the 5th Field Company Engineers, at its present reduced strength, numbers 160 and the C. O. T. C., officers and men, 250.

Queen's Red Cross Society.

While the men have been busy drilling many of the women students have been actively engaged in Red Cross work. Early in the autumn the Queen's Branch of the Kingston Red Cross Society was formed, with Mrs. Goodwin at President, in order that the students, with the assistance of the wives of the Staff, might work during their spare time in the afternoons.

The Secretary-Treasurer reports as follows: At the start all the materials used were received from the Kingston Red Cross Society and returned in kind, but later it was decided to equip the Queen's Engineers, and funds were collected for this purpose. The wives of the Staff, the different Faculties, and some of the Societies of the University, made generous contributions. This money purchased wool, needles, etc., and before leaving town the Engineers of the Second Contingent were presented with a supply of caps, bands, wristlets, scarves and socks, sufficient for their number; while a similar supply was sent abroad to Major Macphail. Since then the work has been going on every afternoon and consists of the cutting out

and making up of flannel shirts, hospital nightshirts, pneumonia jackets and cholera bands, and the rolling of innumerable bandages. The funds are now spent in bandage materials and flannel and the completed articles sent to the Kingston Red Cross Society. It is hoped that the work will be carried on during the summer, as the students who will be in town have promised to help the wives of the Staff.

D. M. G.

GERMANY'S CONTRIBUTION TO MODERN CULTURE.

IN at least two ways we have derived some good from the present calamitous war. For one thing, we have been compelled to learn more about Germany, which to most British people has been almost an unknown land. The Germans have a strange theory that for years past we have been gazing stupefied at their wonderful country, and are now making war on them in a spirit of consuming envy. But the truth is, if they only would believe it, that we have taken hardly any interest in them at all. We knew in a vague way that such people existed, and were trying to make themselves disagreeable; but it has required this great war to fix our attention on them seriously. We can honestly assure them that any envy they stirred in us was due to ignorance, and is disappearing as we come to know them better.

The war has had a further result, welcome to those of us who for one reason or another have had to interest ourselves in Germany. We now have an opportunity of plain speaking, such as we have longed for in vain these many years. Ever since the relations of England and Germany became a little strained there has been tacit understanding that no one should say anything which might cause offence to our very sensitive neighbours. We had opinions about them which yearned for utterance; but we had to keep them to ourselves, and the effort to do so was almost too painful. Now we are at liberty to say exactly what we think. This is a delightful privilege, and we shall do well to make the most of it while the war lasts. A time will come when we are obliged once more to be on our good behaviour. We shall have to discuss German politics and ideals with a show of gravity. We shall have to discover beauties in German art and thought and literature, and to make out that geese are swans. But for this happy interval we are free. We can give a relief to our feelings which will help us to suffer more patiently in the time to come.

The subject on which I propose to exercise the right of free speech is that of the German contribution to modern culture. As we have been informed so often by many of their leading men, the Germans are waging this war in a truly missionary spirit. Assured that their culture is infinitely superior

to every other, they feel bound to impose it on the less fortunate nations. "Germany," writes a Berlin professor, "is the most perfect political creation known to history. We are morally and intellectually the foremost nation, beyond all competition; and the same holds true of our institutions. Our law is reason, our strength the strength of the spirit, our victory the victory of thought." Whatever this may mean, the Germans believe it, and regard themselves as engaged in a holy war for the spread of their culture. A year or two ago I was shown a map issued in Germany for the use of schools—a "culture-map" of the world. The different countries were coloured according to the type of culture that prevailed in them—German culture white, Anglo-Saxon red, French blue, and so on. The countries that had no culture, but were still in a state of primitive savagery, were painted black. I observed with some pain that in this interesting map Canada was black. Since then, however, the Germans seem to have become still more exacting in their ideas of what may rank as culture. The whole planet as they conceive it is wrapt in darkness. There is one white interval, between the Rhine and the Vistula; but all the rest is a heathen black.

What is the meaning of this thing "culture," of which the Germans claim to be the sole possessors and dispensers? It would be difficult to give a precise definition of the German word; no word in German has any precise meaning, and hence the profundity of German thought. Broadly speaking, it seems to answer to our term "civilisation"; but it denotes civilisation in its more intellectual aspect. A nation attains to culture in so far as it develops a life in which the things of the mind are properly valued. To be civilised on a merely political, or commercial, or even moral, basis is not enough; a nation must be intellectually developed before it has "culture." We have to consider, then, how far we can admit the claim of Germany to be the grand leader of culture in the modern world.

That the claim is not entirely groundless may be frankly acknowledged at the outset. For centuries past the Germans have devoted themselves, in an eminent degree, to the higher intellectual interests, and the German mind has never been more vigorous, in some directions, than during the last twenty or thirty years. The high level of culture which has been

attained in Germany has a twofold explanation. On the one hand, there can be no denying that the Germans are naturally a gifted people—not so gifted as they imagine, for no race of merely human beings *could* be so gifted as the Germans think themselves. Indeed, when we look to sheer intellectual qualities, it may be doubted whether they stand particularly high. They are usually dull and ponderous; their mind has none of the brilliant edge that we associate with the French mind, or the Italian, or the Jewish. But there is one great quality which the Germans possess above all others, and which has carried them far. One might describe it as an intellectual honesty. The Germans cannot satisfy himself until he can feel that is getting down to the bottom of things. If he takes up with some science he is endlessly patient in accumulating and sifting all his facts, and is content with the smallest piece of work so long as it is absolutely sound and thorough. If he turns to speculation he works his way back and back, in his search for the ultimate secret, until he drops over some precipice in the region beyond space and time. In all their thinking the Germans have been guided by this conscientious spirit, and to this, much more than to any gifts of natural intelligence, we must attribute their success.

But whatever nature may have done for the Germans, they have done even more for themselves by the systematic cultivation of all the powers that are in them. The place they have taken in the intellectual life of Europe may be explained in very large measure from this cause. Ever since the Reformation, or even earlier, education has been valued and organized in Germany as in no other country. An excellent system of primary schools has raised the whole nation to a certain standard of culture, so that an illiterate German *has* been, for more than a century past, almost a contradiction in terms. Even more remarkable has been the development in all matters that concern higher education. The German Universities have long ranked, and we may acknowledge deservedly, as the first in the world. They draw their students not only from Germany itself but from all countries; for they afford advanced instruction, in no matter what subject, which can hardly be obtained elsewhere. And besides schools and colleges, Germany has devised all manner of institutions for educating her people. The best literature is spread broadcast

in cheap editions. Every fair-sized town has its theatre, supported by public money, where the most approved plays are conscientiously acted before bored but edified audiences. Classical music is performed nightly in hundreds of concert rooms; it pursues the weary citizen on his promenades, and is served up to him in the public gardens along with his beer. Art, in the shape of a symbolic statue of Victory or a monument to Bismarck, disfigures every street corner. The German has all his surroundings so arranged that Culture lies in ambush for him everywhere. He is never allowed to get away from it. It keeps track of him from the cradle to the grave, like the imperial police.

It would be interesting to enquire how the intellectual interests have come to occupy the place they undoubtedly do in modern German life. The main reason is probably a historical one. For centuries, as we all know, Germany was cut up into a number of small states and had practically no share in the larger activities of Europe. Her citizens found almost all the usual careers foreclosed to them. While the Englishman and the Frenchman were free to exercise their intelligence in the actual work of the world, the German was driven in upon himself, and had to cultivate his mind for its own sake. The able man who in another country would have been a successful statesman or merchant, became in Germany a philosopher or grammarian or poet. This is the explanation of that wonderful period at the beginning of last century, when the Germans suddenly revealed themselves as the chief masters in every department of human thought. They had been forced to concentrate themselves on the things of the mind, and had learned to cherish those things, without any ulterior motives, as their own reward. The divided states of the eighteenth century have now been welded into a strong, ambitious empire, but the intellectual tradition that grew up in the old days has persisted. Indeed, the empire has made a deliberate effort to maintain it, for purposes of its own. It recognized, not only that her spiritual achievement was the chief glory of Germany, but that her victories in war and commerce and all the rest were mainly the outcome of her long sojourn in the world of ideas. All things had been added to Germany because she had sought first the Kingdom of God, and it was decided to seek the Kingdom still—for the sake of the per-

quisites. But this enterprise has only succeeded up to a certain point. Knowledge pursued for itself is one thing, and knowledge exploited for the material gain of a greedy military empire is quite another.

We come, then, to our question, "what has Germany, this modern Germany which has undergone such a transformation in the last century, contributed to the world's culture?" That it has contributed much, no one who is not blinded by the prejudices of the hour would care to deny. But we cannot accept, without some qualification, the Germans' own estimate of their claim on our gratitude.

Taking culture first of all in its narrower sense of positive knowledge, enrichment of the store of facts at our disposal, Germany has indeed accomplished great things. Workers in almost every field of science and learning would willingly acknowledge that the largest part of their debt is due to Germany. It is true that even here a reservation must be made. In those positive sciences, where their pre-eminence may be admitted, the Germans have not as a rule given the creative impulse. Darwin, that contemptible Englishman, was, after all, the founder of modern biology. Pasteur, a corrupt and decadent Frenchman, was the man who revolutionized medicine. Even the barbarous Russians have had the effrontery to originate ideas in chemical research that had never been thought of in Germany. But the fact remains that in all departments of knowledge the great mass of important work is German. I can only speak with adequate information of my own special field of theology; and here there can be no doubt whatever of German pre-eminence. If the Germans had been as far ahead of us in military as in theological science, they would have entered London about the middle of last August. In other fields such as philology, psychology, the various physical sciences, their superiority may not be so pronounced, but I am afraid that it must be acknowledged. There is something in their claim to be general purveyors of culture to the world. This position they have reached, partly, no doubt, by their natural and acquired intelligence, but still more by their method of rigid specialization. A well-known English teacher who died the other year was in the habit of giving a farewell counsel to his students—a sort of recipe for achieving greatness. "Take up," he said, "some limited subject, and work at it

steadily five hours a day for thirty years together, and you will then find yourself the chief living authority on that subject." We people of other nations find it hard to act up to this advice. We are apt to find the world an interesting place, full of miscellaneous things which we want to know something about before we go. But the German, with his instinct for fitting himself in, as a mere part of an organism, has no difficulty in settling down to his one subject. He sticks to it for a lifetime, and exhausts its minutest possibilities. There are thousands of scholars all over Germany who have thus sub-divided among them the field of knowledge—each one working on his little section, like a Chinaman on his two-acre farm. And the result inevitably is that for thorough information on any subject you must apply to Germany. The Englishman or Frenchman, whatever intelligence he brings to his work, is apt to appear in the light of a mere popularizer. He finds at every step that some burrowing German has been before him, and that nothing is left to him but to gather up the German results.

But culture involves something more than the accumulation of facts, even though the facts are pressed into the service of a real advancement of knowledge. To contribute to the world's "culture" a nation requires to give some spiritual impulse—to open up new paths in the higher regions of thought and imagination. What has Germany done for culture when we understand the term in this sense? Here, again, it may be answered that Germany has done much—far more than her share. Luther, the greatest religious teacher of the modern world, was a German. Goethe, one of the three or four supreme poets of all time, was a German. Most of the great philosophers, practically all the greatest musicians, have been Germans. But the fact must not be overlooked that these men all belonged to the old Germany, before the empire of the present day was ever dreamed of. What of the new Germany which came in with Bismarck, and which has now had fifty years of unexampled opportunity to show the capacities that are in it? It must be answered that in everything that concerns the higher intellectual life, this great Germany of the last fifty years has been almost negligible. The creative powers of the German mind seem to have been touched with some kind of paralysis, although the effort to create has been more

strenuous than ever before. No doubt if you ask a German what his country is now doing in art and literature and philosophy he has his answer ready. He tells you: "We are supreme in those fields as everywhere else. Look at the immortal works of Noodle and Doodle and von Skunk—still young men, all of them. There is sublimity for you! There is Nature!" But it cannot be disguised that outside of Germany no one pays any attention to Noodle and Doodle. Their countrymen propose to force them on us at the point of the bayonet; but I doubt if their genius will penetrate us even then. France and Russia, not to speak of England, are contributing richly to the world's higher culture. Belgium can show artists and writers, still living, whom every one would place in the first rank. Norway, with its poor two millions of people, has been one of the great nations in the history of modern literature. But it would be possible to make a fairly complete review of the creative work of our own times without ever mentioning the name of Germany. The various schools of German painting are all of the same ineffective, conventional type; the technical skill of many of the artists only serves to set off their dearth of ideas and inspiration. Sculpture, an art much cultivated in Germany, owing to the demand for military monuments which may insult French feelings, is in even a worse case. When the French get into the country in a month or two and put those statues to their proper use as targets for artillery practice, they will perform a real service to culture. As for modern German literature, it is the most futile and commonplace that has ever been produced by a great nation. There has been no German poet, distinguishable to the naked eye, since the death of Heine; and he, by the way, was a Jew. Two or three dramatists, such as Hauptmann and Sudermann, stand out rather conspicuously—but this is entirely due to the flatness of the surrounding country. On the German achievement in fiction, the characteristic modern art, it would hardly be fair to pass a judgment. To do justice to any work of art you require to consider it as a whole; and I have not met any one who has read a German novel right through. The only German writer of our time whose force and distinction would be generally acknowledged is Nietzsche. By going off his mental balance he contrived to break through the mediocrity which is native to German talent; and in spas-

modic jerks did some original thinking. The series of works in which he rhapsodises on the moral ideals of the Iroquois must be regarded as Germany's chief literary gift to the cause of culture. On modern German philosophy I speak with becoming diffidence. I believe, however, that the outstanding name in philosophical Germany is that of Eucken, into whose ocean of meaningless words I have taken a few brief plunges. After this experience one is able to realize the full bitterness of the cry, "Back to Kant!" It is possible that in the one art of music Germany still has a message to give the world; certainly in all that concerns the practice and technique of music she maintains her old supremacy. But I have been assured by those who profess to judge that the modern German music is mostly technique and craftsmanship, with little of genuine spiritual quality. Any musical revelation that we may expect in our time is more likely to come from Russia. Wherever we look, then, we find the same sterility in the higher intellectual work of modern Germany. The creative springs which at one time yielded so abundantly have for some reason dried up during the last generation. And perhaps it is not difficult to discover the reason. The Prussian system which has been imposed on the nation since 1870 has crushed out freedom and spontaneity. This, indeed, has been its very object—to substitute a mechanical regularity for the free movement of the spirit. For purposes of science and philology the system is not unfavourable, and the proficiency of Germany along these lines is no doubt due, in large measure, to a strict organization of knowledge. But to the labour of thought and imagination the system is fatal. Poetry refuses to march to the goose-step. No great ideas can find room to grow in minds that have been compressed into regulation shape by the drill sergeant. This is true, more especially, of the German type of genius, which is impatient of fetters, and has always reached its finest development when it was left perfectly free. It is not too much to say that the imperial regime, which in so many ways has made Germany great and successful, has stamped out the higher spiritual life of the nation.

We have now considered the German claim in connection with two of the meanings of the term "culture." There remains a third meaning, more important than either of them, which cannot be neglected. "Culture," in its broader sense, is

equivalent to "civilisation"—an older and much better word. And men are civilised according as they become "cives"—endowed with the habit of mind which fits them to be citizens in a state. Modern culture—modern civilization—implies that sort of training and discipline which is required in a modern state, as opposed to a community of the ancient or mediaeval type. What contribution, then, has Germany made to modern culture? How far has she set an example of how life should be ordered if men are to be fully developed as citizens under the complex conditions of this twentieth century? It may be readily granted that in this direction also Germany has done much. No cities in the world are so well policed, so well swept and lighted, furnished with so many amenities and so many safeguards to the public health, as German cities. Their municipal government is a model, which all other nations have been compelled to study. Politically and socially, also, there is much to be learned from Germany. She was the first to undertake obligations towards her people which had not previously been recognized as coming within the province of the state. She saw to it that all children were educated, that workmen were insured against accident and illness and unemployment, that merchants and manufacturers were duly assisted in all promising enterprise. No administration takes upon itself so many duties, and performs them all with such uniform efficiency, as the German. And this is chiefly what the Germans have in mind when they speak of extending their "culture" to the less favoured nations. They walk about Kingston, or survey it through loopholes in Fort Henry, and wonder how we can possibly object to have a burgomaster placed over us, with orders from Berlin. He would clear away those ugly buildings at the water-front, and suppress the pianos in boarding-houses, and put chairs in the park, where we could sit together and enjoy our beer. All these benefits, and a hundred others, we might have by the simple expedient of coming under the German flag—yet, in our blindness, we refuse. Perhaps we are to blame. There are advantages to be gained from the German system which would be well worth securing, at any reasonable price. But when all is said, they are only bye-products of civilisation and not the thing itself. A nation is not necessarily civilised because it is careful about town-planning, and has up-to-date methods of banking and agriculture and railway ad-

ministration. These are excellent things, but there is a more important kind of development which ought to precede them. Here, it seems to me, we come on the radical mistake of Germany. It has begun its civilising programme at the wrong end—working at the super-structure before it has seen to the foundations. It reminds you of a man who attires himself faultlessly in the latest fashion, while omitting to wash and shave. Here are we in Canada—a most uncultured people, as we sadly acknowledge. Black is our appropriate colour. An opera by Wagner has hardly ever been performed in the country. You may travel through some parts of the West for days together without meeting a single philologist. There are quite considerable towns which have no picture gallery, and not even a statue. Still, in our poor uneducated way we have tried to do something. By our laws and institutions we train our citizens in certain elementary ideas of justice, and of respect for themselves and others. Every year we take in thousands of refugees from German culture, and give them room to develop into free men, capable of taking their place in a modern society. That is our crude notion of what civilisation means. We assume that men are rational creatures, entitled to their own judgment in deciding what is good for them, and we try to build up a state grounded in that assumption. Now the Germans have failed as yet to conceive of civilisation in these terms. They have created a wonderful empire, as populous and industrious and perfectly organized as a hive of bees. But they do not seem to understand quite clearly that there is a difference between men and bees. In any case, it has never dawned on them that a modern community has to be adapted to the needs of modern men. Away back in the days of Sennacherib the German ideal of the state was fairly workable, though it was becoming a little obsolete even then. But in the intervening ages there has been some progress. Men have attained to new outlooks on the world; they have grown to a new consciousness of their human rights and obligations. A social system in which they can feel at home, and develop to the best that is in them, must be different from that of Niniveh. Nothing could be more absurd than the German claim to represent *modern* culture. Germany stands in this twentieth century for a type of civilisation which has grown hopelessly antiquated. The progress of the world has consisted in nothing

else than in the gradual discarding of those ideas on which the whole structure of German life is based.

The Germans are waging this war with a sublime faith in the excellence of their culture, and a determination to impose it on the rest of the world. We have seen reasons to doubt whether it is so excellent in quality as they suppose; but even if it were all that they claim for it, have they any right to make it universal? Do they not betray, by this very project, their utter ignorance of what culture means? It would be a dismal world in which every nation was forced into one pattern—the German or the British or any other. What we need is the free development of all the peoples, each in its own way, so that all may contribute their individual gifts to the common store of mankind. This variety in national life and thought—this progress of the race along many different roads, is essential to the growth of a higher culture. The Germans have done much in the past to help on the intellectual life of the world; they will do so again when they have learned to be content with the place that belongs to them. It is our duty, meanwhile, to make them be content with it. They have been our teachers, we thankfully acknowledge, in many arts and sciences, and the least we can do is to give them a lesson in return. They cannot do much more for the world's culture till we have thoroughly taught them this lesson—that they must respect the rights of others, and think far more humbly of themselves.

E. F. SCOTT.

THE FINANCIAL POWER OF THE EMPIRE.

I.

Lombard Street and the War.

IT is a mere platitude to say that the world of to-day is linked together by almost inextricable bonds of industry, commerce and finance. Nevertheless, the full meaning of this fact was not felt or understood before the outbreak of the great world-war in August of last year. The breakdown of international credit and finance, so long predicted as the inevitable result of a war involving the great nations, almost paralysed the industrial and financial life of the whole world.

New York, London, Paris and Berlin had formed a series of financial ganglia, each being keenly sensitive to changes in the economic and financial conditions in the other centres. More than that, many of the great banking houses in these financial markets were international in character, not only controlling international capital, but being managed by directors who represented almost every important European nation. The great banking houses in these cities were Anglo-German, Anglo-French, or Anglo-American. In a word, there was a system of interlocking directorates which harmonized the economic and financial interests of the principal investing nations of the world. Gigantic corporations in London, Paris, Berlin and New York welcomed shareholders and accepted their money, no matter from what quarter of the world they came, with absolute disregard for diplomatic alliances and the world groupings of the great powers. Bills of exchange drawn on London provided an international currency for the whole world, and London itself was the pivotal point around which the far-flung commerce of the nations centred.

Nationalism in itself was no bar to co-operation in business on the one hand, or intense competition on the other. English, French, Germans and Russians worked in harmony behind the high protective tariffs of Russia, Mexico, the Argentine, Brazil and China. British capital was invested in Germany, and German capital in British Colonies. French and German capitalists competed in Russia and Turkey. At the very moment that war was declared British armament firms

were constructing battleships for Turkey, and German officers were reorganizing the Sick Man's military forces. These facts are obvious now, it is true, yet they were really not part of the every-day thinking of the masses of the people. It required the shock of war, which suddenly destroyed the great edifice of world-wide commerce and finance, to prove the truth of Norman Angell's contention that the economic interests of the nations are one.

Six or seven months ago the world had achieved at least a mechanical unity. The merchant in New York or Peking could telegraph money or messages in a moment to any part of the globe. Almost at any time, on any day, one could buy transportation to any part of the civilized world. Year after year, with but slight interruptions, this process had been going forward; and year after year the boundaries of what we call civilization were being extended. Then, with paralysing suddenness, this artificial structure of commerce, trade and finance was submerged as completely as Herculaneum was blotted out by the ashes of Vesuvius.

Almost in a day the exchanges of the world closed their doors. At the moment securities ceased to be saleable the currencies of the nations ceased to be interchangeable. Every belligerent power, with the exception of the United Kingdom, and many neutral nations, suspended gold payments. Then followed the declaration of moratoria almost everywhere—except in Germany—of varying scope and degree. While Germany did not declare a moratorium it adopted devices for postponing the payment of debts, which amounted practically to the same thing. Within a few months, however, the United Kingdom was able to abolish its moratorium decree, the first declared in its history. France has gradually and steadily lessened the restrictions on the collection of debts imposed at the outbreak of war. In most other countries, however—in Europe, in South America, and in the East—moratoria have been extended either in their first form or modified in greater or less degree.

Neutral nations as well as belligerent were forced to adopt this expedient. Austria, Belgium, Italy, Greece and Bulgaria, as well as the Scandinavian countries, either declared moratoria, or, as in the case of Holland and Switzerland, authorized their courts to grant extensions of time to debtors. South

Africa gave the Governor-General power to grant relief to debtors, either by extending the time for the payment of debts, or by the stay of execution of debts incurred before August 4, 1914. New Zealand enacted a law making it unlawful for a mortgagee to foreclose on a mortgage until six months after the end of the war, except by consent of the Supreme Court. The principal countries of South America—Brazil, Argentina, Peru and Uruguay—all declared moratoria of one kind or another. In view of the fact that the Argentine Republic has proved Canada's chief competitor, both in the securing of capital in Europe and in the marketing of products abroad, the measures adopted there are of more than passing interest. The Argentine Republic granted its banks thirty days' delay in meeting their obligations; and extended the moratorium until the Conversion Office should resume the exchange of gold for paper. Later the obligation of the Conversion Office to exchange gold for paper was suspended until further notice, thus automatically extending the moratorium. The banks were authorized to pay only twenty per cent., at any one time, of deposits due any creditor. Even then good reason had to be shown that the withdrawal was necessary. This should be borne in mind in connection with Canada's financial position, which will be discussed later. The United States did not declare a moratorium, it is true, but the banks agreed to refrain from demanding the payment of call loans on stock exchange collateral as long as the exchanges were closed. This may be regarded as an application, in part at least, of the moratorium principle.

At the outbreak of the war Mr. Lloyd George, Chancellor of the Exchequer, lost no time in assembling a committee of the ablest financiers of England to advise the Government concerning the adoption of proper financial measures. For several weeks prior to the outbreak of hostilities the atmosphere of the Continent was electrical, and foreboded a great financial storm. Undoubtedly the bankers of Berlin and Paris had received information from their respective Governments that war was not only a possibility, but a probability; and they immediately began to sacrifice securities on the London and New York exchanges. British holders of American stocks and bonds also began to prepare for the struggle by selling large amounts of securities in America. At the beginning of

this movement Paris was considerably indebted to London; but English balances in France were soon exhausted by a heavy selling movement in securities on the London market, directed from Paris. London, therefore, was obliged to ship gold to Paris, to which, however, the outbreak of war put an end.

As has been said, the declaration of war demoralized the stock exchanges of Europe and America. Continental banks, as far as possible, withdrew their balances from London. English creditors were pressing American debtors for payment, with the result that bills of exchange drawn on London sold at unprecedentedly high figures in New York. Indeed, exchange soared high above the gold export point, and there were heavy shipments of the yellow metal to Europe. England's very financial strength proved an embarrassment to neutral nations who were indebted to her. At the outbreak of war the United States owed about \$350,000,000 to the United Kingdom, for which it was impossible to make immediate payment in gold. This debt, it may be noted in passing, has been made good since by the shipment to England of American commodities, such as cotton, wheat, oil, etc.; and by heavy purchases of war supplies in the Republic on English account.

Lombard Street, the greatest financial centre in the world, weathered the storm successfully and proved how enormously strong is the English financial system. On July 30 the Bank of England's discount rate was increased from three per cent. to four per cent., and on the next day to eight per cent. On August 1 it reached the unprecedented figure of ten per cent. On August 2 the moratorium on bills of exchange, to which we have referred, was declared; on the following day a bill for a general moratorium passed Parliament.

At the close of August 1, before a single shot had been fired, and before there had been any destruction of property by hostile armies, the whole world-wide fabric of international credit and finance had vanished. The London stock exchange had been closed, and the discount market was demoralised; the acceptance houses were unable to obtain the necessary funds to cover bills of exchange as they became due; and the liquid assets of the joint stock banks—that is, their stock exchange and money market loans—became unreliable as re-

serves just at the moment when depositors were beginning to withdraw their funds. Commerce throughout the world was at a standstill; everyone began to hoard gold; and the Bank of England's resources were put under terrific pressure. It was at this moment that David Lloyd George, surrounded by a group of eminent financiers, decided upon decisive action. The Government guaranteed the Bank of England against any loss it might incur by discounting bills of exchange which had been accepted before August 4. In addition, the Government determined to come to the support of the financial institutions of the nation by issuing a legal tender paper currency in denominations of one pound and ten shillings respectively. This issue of paper money was limited to an amount equal to twenty per cent. of the deposits in the banks of the United Kingdom—that is, to a maximum of £200,000,000. On any advances of this paper currency that might be made to the banks, the Government charged 5 per cent. interest. These measures almost immediately restored confidence in the London financial market; and placed the Government in a position to turn to account the wonderful money power of the United Kingdom.

Talleyrand once cynically remarked that speech was given to man in order that he might conceal his thoughts; and perhaps the reader may conclude that most financial articles bear out this saying. We shall, however, attempt to escape this charge, and explain more clearly and precisely what was involved in the above measures.

The chief difficulty in London at the outbreak of war was found in preserving intact the financial mechanism of Lombard Street. The smooth working of the financial machinery in this market is vital not only to London and the United Kingdom, but to the whole world. It is chiefly through the London money market that the world's trade and commerce is financed. By means of bills of exchange drawn upon London, grain, manufactured goods, metals, coal, oil, rubber and other articles required by civilized and uncivilized man, are carried over the seven seas to their ultimate destination, and to the final consumer. Now, the sellers of these goods cannot, as a rule, wait for the money due them until dealers finally realize upon their purchases. The London money market—that is, the banks, the bill brokers and the acceptance houses—provides the capi-

tal necessary to carry on this vast international trade. In other words, Lombard Street buys and sells bills of exchange, through which and by means of which, foreign trade is carried on.

London has made a specialty of international bills of exchange; and these bills are regarded as good as gold in every quarter of the world. German, Austrian, Russian, French and other dealers, arrange with London accepting houses to accept the bills that are to pay for goods bought in countries all the way from China to Peru. For example, a Hamburg merchant buying cotton from Texas, or coffee from Brazil, or wheat from the Argentine, or silk from China, or opium from India, or cocoanut oil from the South Sea Islands, or ostrich feathers from South Africa, arranges with an English acceptance house to accept the drafts which are to pay for these commodities. The English acceptance house, while accepting the draft for the Hamburg merchant, and thus becoming liable for its payment, requires him to sign a certificate guaranteeing that, through his banker, or otherwise, he will put the acceptance house in possession of funds shortly before the bill is due, generally three days before it matures. In the meantime the Brazilian or other seller of the goods gets a first-class financial document, guaranteed by a strong financial English institution. These bills, which, as a rule, run for a period of three months, can be immediately discounted by the exporter, who thus receives his money at once. On the other hand, the Hamburg importer gets possession of the goods as he signs the certificate guaranteeing to put the English acceptance house in possession of funds to meet the draft when it becomes due. Having secured the goods he either sells them, or manufactures them into the finished product; and before the three months' period is up, he has realized a sufficient sum from the sales he has effected to meet his obligations in London. The English acceptance house, of course, receives a commission for carrying out its share in such transactions. London levies an enormous toll upon the commerce of the world which flows in this way through her gates.

It is estimated that ordinarily there are £300,000,000 of such bills in the London market. This huge sum is being lent by Great Britain, as we have said, to finance the trade of the

world. It is true that this in part represents the trade of Great Britain itself; but a huge business is done on foreign account. It is because of the vast resources of the London discount market that all the leading banks of the world find they must open branches in that city, whether they are French, German, Austrian, American, Canadian, Russian, Chinese or Japanese.

Consider the position, for a moment, of the accepting houses, which were responsible for the payment of this vast sum of £300,000,000 within a period of not more than three months. The dealers in exchange are, in the main, the bill brokers, the large private bankers, the accepting houses, and, to a less extent, the joint-stock banks. The outbreak of war relieved them in no particular from meeting their obligations; while, on the other hand, it was, of course, impossible to collect from German and Austrian importers, and from other European buyers who had been embarrassed by the war. Temporary relief was given to the acceptance houses by the declaration of the moratorium, to which we have already referred, which suspended payment upon their obligations for a time.

In the course of years this wonderfully efficient and highly delicate credit mechanism has been evolved to meet the needs of the world. The system works with accuracy, smoothness and precision at ordinary times; but in order to keep the machinery in operation the stream of remittances from home and abroad must flow to the acceptance houses steadily, and the brokers and other dealers must continue to purchase the bills of exchange which are offered for discount in the market. A sudden blow to this system, severe enough to stop the process we have outlined, will paralyse the whole money market; and between July 28 and July 31 the whole machinery did come to a sudden stop, and the money market was reduced to chaos.

In the last analysis the London credit system depends upon the power of the great joint stock banks to furnish the money to carry on financial operations. These banks have deposits of £1,000,000,000, which are utilized in large part to purchase bills of exchange and to advance money to bill brokers to permit them to enter the discount market and deal in bills. Thus, the bills of exchange, either by direct purchase

by the joint stock banks, or by way of security in advances to bill brokers, find their way for the most part to the portfolios of the joint stock banks. If these banks cease to purchase, or to lend on, bills, serious trouble must result.

At the first sign of trouble the joint stock banks began to protect their reserves, and to strengthen themselves in every possible way to meet the coming storm. They ceased buying bills, and began to call in their loans from the discount houses and bill brokers. These latter, therefore, were placed in a difficult and dangerous situation. They are the middlemen who hold enormous amounts of bills partly through the use of their own capital, but mainly on money borrowed from the banks and other financial houses. In order to repay their loans they would have to sell their bills. But the joint stock banks refused to buy bills; and, as has been said, at the same time called in their loans. The dealers in foreign exchange were thus ground between the upper and the nether millstone. Their only recourse was to discount their bills at the Bank of England; but that institution rarely takes any but short-time paper. Moreover, as the Bank of England continued to raise its rate of discount until it finally stood at 10 per cent., the brokers and discount houses could not realize upon their holdings at the Bank except at ruinous rates.

It will be necessary to recall at this point that at the outbreak of war, owing to the pressure brought by England upon her debtors abroad, there was a rush to buy bills of exchange payable in London. Exchange, as a result, rose to an impossible figure, particularly in New York. So high indeed did it become that debtors could remit to London only at a great loss. Finally, too, the United States ceased to ship gold, as its banks wished to protect their own position; and thus, between the impossibility of shipping gold, and the abnormally high rate of exchange, Americans could do little or nothing to relieve the situation in London. They could not discharge any great part of the \$350,000,000 for which they were indebted to the United Kingdom. But in the meantime the London accepting houses were protected by the declaration of the moratorium, which relieved them from the obligation of meeting £300,000,000 within three months, or £4,000,000 each business day. In addition, the Government guaranteed the Bank of England against any loss it might sustain through discount-

ing bills accepted before August 4. This permitted the Bank to advance loans freely to the bill brokers and the discount houses at fairly reasonable rates. And finally, the Government advanced to the banks about \$270,000,000 in a legal paper currency.

The declaration of the moratorium had relieved the situation, but it could not get the wheels of trade revolving again. The joint stock banks would not buy new bills as long as they could not realize on those they held; the discount houses had very heavy liabilities in respect to the bills they held, or had sold to the Bank of England, and they were not willing to add to their liabilities by making new purchases. The trade of London and of the whole United Kingdom had come to a stop. And not only had the commerce of the United Kingdom come to a standstill, but the international trade of the world. Grain was piling up in New York and Montreal; cotton in New Orleans and Galveston, and a thousand and one other products were lying on the wharves of the various exporting nations. It was absolutely necessary, therefore, to get the stream of foodstuffs and raw materials moving again toward the United Kingdom and other countries. It was at this point that the Bank of England and the Government came to the support of the London market by the methods mentioned. Through the government guarantee the Bank was able to advance funds to the discount houses, and to the bill brokers, permitting them again to go into the market and buy bills of exchange. The liability of the accepting houses, of course, remained as before; but they were not required to make payment until a year after the war.

In addition to all these measures the Government undertook to carry 80 per cent. of the war risk on marine insurance. The Bank of England, moreover, arranged for the transference of gold from the United States to Ottawa, to avoid the risk of gold from the United States to Europe, to avoid the risk of loss by shipment to Europe. The Bank also arranged to purchase gold in South Africa, and to deposit it with the Government of that Colony. This measure proved invaluable to the South African gold interests. At first considerable gold was sent from New York to Ottawa; but at present the movement is in the other direction. New York exchange has again become normal; in fact, it is now in favor of America owing

to the immense shipment of food supplies from this continent to England, and the heavy buying of war materials in the American market.

Before we leave this phase of the subject something further should be said concerning the paper money that was issued in the United Kingdom. This paper money is equivalent to gold, and is backed up in large part by gold deposited to the credit of the Government at the Bank of England, and in part by government securities. England, indeed, as has been said, is the only belligerent nation that has remained on a gold basis. Up to the present time she has not found it necessary to suspend specie payments; although every belligerent country, as well as many neutral nations, including Canada itself, has been obliged to adopt this expedient. Perhaps in no other one particular has the vast financial power of the United Kingdom been so clearly disclosed as in her ability to maintain her currency on a gold basis, and to continue to finance the international trade of the world.

II.

The Financial Resources and the Investment Power of the Nations Involved in War.

In carrying on the present conflict the ability of the respective belligerents to secure war material abroad counts tremendously in the final issue. The United Kingdom has had for several months undisputed command of the sea, and there is no possibility of her enemies menacing her position there. France has also access to the markets of the world. The case is somewhat different, however, with Russia. At the time of writing the only ports through which she can ship and receive supplies are Archangel and Vladivostok; although, of course, during the winter months the former port is closed by ice. At the same time, however, it should be remembered that Russia has received enormous quantities of goods by way of Sweden. The connecting link between the Swedish and the Russian railway systems of the north was forged soon after the outbreak of war; and over that line Sweden has been pouring vast quantities of goods into Russia. Great Britain and France have bought at least \$500,000,000 worth of war materials and supplies in the United States. Indeed, when it is

recalled that the Republic has been virtually turned into a vast arsenal for supplying munitions of war to Great Britain, France and Russia, it will be seen that the United States is as effectively helping to bring the war to a successful conclusion, as far as the Allies are concerned, as if it were actually engaged in the struggle itself.

One of the striking features of the present world-wide war is the fact that the greatest leading nations of the world—Great Britain, France and Germany—are involved. Russia, on the other hand, and Austria-Hungary are borrowing, rather than lending, nations. The United Kingdom has at least \$20,000,000,000 invested in all parts of the world; of which over one-half has been placed in North and South America. Her investments in the United States amount to about \$4,500,000,000; in Canada to about \$2,500,000,000; and in South America, particularly the Argentine Republic, Brazil and Chile, very large sums have been placed. The interest on her huge foreign investments amounts to about \$1,000,000,000 a year. As has been said, the United Kingdom has placed its funds in almost every civilized and uncivilized country throughout the world, and especially in the United States, Canada, the Argentine Republic, Brazil, Chile, India, Australia and Africa. In recent years she has not been increasing her investments in European countries, with the exception of Russia.

French foreign investments amount to about \$9,000,000,000; the interest on which yields the sum of \$450,000,000 annually. France has never ventured far afield in placing its capital investments, and has preferred to hold semi-investment or investment securities, rather than speculative securities which yield high returns. The French have placed their money largely in Russia, Italy, Austria-Hungary, Turkey, and the Balkans, buying from these nations Government bonds and municipal securities. Industrials have never appealed very strongly to French investors, although France holds large amounts of railway securities in the countries mentioned. That country has invested considerable sums also in Mexico, and smaller amounts in the United States and Canada.

Germany's foreign investments amount to about \$5,000,000,000, the annual interest of which yields \$250,000,000. Germany stands in an intermediate position between Great Britain and France, with regard to the types of securities in

which it has placed its money. The Germans have been more venturesome than the French, buying widely semi-speculative securities; but yet they have not gone as far as the British in placing their capital in new and untried undertakings. A great deal of their capital is invested in Russia, large amounts in Austria-Hungary, and considerable sums in North and South America. German investors hold large blocks of Canadian Pacific and Union Pacific stocks. A good deal of German capital also has been invested in the Near East, in China, and in South African mines.

Russia, as has been said, is not a lending nation. For generations to come that vast empire will be obliged to borrow capital to develop its great natural resources. At the present time Russia owes very large sums to Berlin and Paris, and must meet the interest on French holdings by further borrowings, at least during the course of the war. In recent years, as has been said, the United Kingdom has invested considerable sums in Russian railways and in industrial and mining concerns.

We are now in a position to understand the great financial strength of the United Kingdom, as compared with that of Germany. Germany has too much capital invested in the war zone, and in belligerent countries. She has very large sums, as has been said, in Russia, Canada, and other parts of the British Empire, which will certainly yield no return during the course of the war. Germany took big chances in Turkey and in the Near East. Upon all these investments she is bound to suffer loss, at least during the course of the war. At the same time Germany must find at least part of the sinews of war for her allies. Therefore, in surveying the financial position of Germany it seems clear that her foreign investments will yield her very little as long as war lasts.

It is true that American stocks held in Germany could be sold in the United States, but only at a great loss. On the other hand, France is not in a much more favorable position, as she has too much capital invested in Austria-Hungary, Germany and Turkey; while her huge holdings of Russian securities will yield her little or nothing during the course of the war. Indeed, France and Great Britain have had to come to the help of the Russian Empire in order to modify the foreign exchanges. Russia, being in debt to both Great Britain and

France, and at the same time being obliged to buy huge military supplies abroad, found herself in an exceedingly difficult financial position at the outbreak of the war. The foreign exchanges turned against St. Petersburg, and it became difficult to make payments in London, New York and Paris. The United Kingdom, however, soon came to the help of her ally. Russia borrowed \$60,000,000 at the Bank of England, and floated a \$50,000,000 loan in London. Recently it was decided at Paris, at a meeting of the finance ministers of the allied Governments, to furnish Russia with an additional loan of \$250,000,000, half of which is to be raised in Paris, and half in London. It is interesting to note that American financiers have recently advanced \$25,000,000 to Russia; and it may be quite possible, despite the neutrality of the United States, that much larger sums will be privately secured for Russian account in New York.

As has been explained, so strong was Great Britain's financial position at the outbreak of war that she almost created a panic among her debtors by calling in the short-time loans due her. We have already remarked on the unprecedented state of foreign exchange at this time. It cost, for example, at one time over \$7 to pay a debt of £1 in London, so great was the demand for bills of exchange on the latter centre. This was due, of course, to the pressure that Great Britain brought to bear upon American debtors. So great was the force that the United Kingdom was able to exert upon the whole world for the payment of money that moratoria were declared far and wide, to protect local interests. American exchange, however, slowly righted itself through the shipment of gold from New York to Ottawa, and the purchase of enormous amounts of war supplies by Great Britain in the United States.

The American Secretary of the Treasury has estimated that the United States owed Great Britain, on current account, at least \$450,000,000, all of which had to be paid not later than January 1, 1915. It will be seen, therefore, that with such large sums due to Great Britain there was no immediate necessity for that country to sacrifice its holdings of securities on the New York, or any other, stock exchange. Indeed, it would have been impossible, under the circumstances, to have

done so; as it will be recalled the stock exchanges everywhere were closed at the outbreak of war.

During the six months since the beginning of hostilities, Great Britain has imported \$768,000,000 worth of goods more than she has exported. This compares with an excess of imports for the corresponding period of last year of \$367,000,000. It might be wondered how the United Kingdom could buy such enormous supplies of goods, and at the same time actually strengthen her credit position everywhere. The Bank of England has to-day much greater gold reserves than it held a year ago. It must be kept in mind, however, that during this period British shipping has earned in freight charges at least \$225,000,000; while the interest on the country's foreign investments, during the same period—deducting all bad accounts and losses due to the war—has amounted to about \$425,000,000. When these sums are taken into account it will be seen that only about \$118,000,000 of the imports has yet to be accounted for. That amount undoubtedly has been made good by commissions on banking business, on foreign account, transacted through London; by insurance premiums on British insurance business abroad; and by remittances from India by officials in the Civil Service. Thus it is clear that the United Kingdom has not reduced its capital holdings abroad by a single dollar; and, therefore, the enormous annual return on its foreign investments is available to help finance the war.

At the same time it must be remembered that the United Kingdom has not only taken care of its own needs, since the outbreak of hostilities, but has made arrangements to help finance its Colonies, Dependencies, and Possessions, as well as its Allies. For these purposes Great Britain has advanced the following sums:—

British Colonies	\$225,000,000
Russia	110,000,000
Belgium	50,000,000
France	50,000,000
Roumania	25,000,000
Servia	4,000,000
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Total	\$464,000,000

Part of this, to be sure, has been furnished to take care of loans that were made before the war to some of the countries concerned. In order further to protect its financial position, the United Kingdom has forbidden the flotation of any industrial or commercial loan in the London money market until all Government requirements have been met. While the British Treasury has no control over the market as such, still it had been given power to supervise and control stock exchange transactions. Thus the Treasury is in a position to make its will effective.

In connection with all that has been said we should not overlook the domestic situation. The annual income of the people of the United Kingdom, according to the estimate of David Lloyd George, is \$11,000,000,000. It is possible that there will be some falling off in this income during the course of the war, but yet the loss will be very slight indeed. Unemployment is actually less at the present time throughout the Kingdom than it has been for years, and most industries are working overtime to fill war orders. When we regard the state of Great Britain's public debt also and compare it with the debts of other nations, it will be seen that she can easily carry the load of taxation made necessary by the war. The following table furnishes some interesting data on the finances of the leading nations of the world:—

Country.	Debt Before War.
Great Britain	\$3,305,000,000
Germany	1,200,000,000
France	6,575,000,000
Belgium	740,000,000
Austria-Hungary	2,450,000,000
Russia	4,450,000,000
Servia	130,000,000

It will be observed from these figures that Germany's debt is very much smaller than Great Britain's and a great deal less than that of France. At the same time, it must be kept in mind that the German debt does not include that of the individual German States, such as that of Prussia, Hanover, Saxony, Bavaria, and so forth. When these are added there is very little discrepancy as far as the debts of Germany and the United Kingdom are concerned. In this connection it is

well to keep in mind that the former nation has been practically cut off from the commerce of the civilized world; and hence it must prove increasingly difficult for Germany to find new funds to finance the war, and at the same time to raise revenue to meet the interest on its national obligations.

A careful study has been made recently by the Bureau of Foreign and Domestic Commerce of the United States concerning the financial resources of the nations engaged in war. The figures presented, however, mean little or nothing in themselves unless they are properly interpreted. On July 1 last the per capita debt in each of the countries was: Great Britain, \$72; Germany, \$18; France, \$166; Belgium, \$97; Austria-Hungary, \$48; Russia, \$21, and Servia, \$44. The war debt incurred since that date has added the following per capita debt: Great Britain, \$34; France, \$46; Germany, \$39; Belgium, \$17; Austria-Hungary, \$35; Russia, \$15, and Servia, \$44. The present per capita debt is: Great Britain, \$106; France, \$212; Germany, \$57; Belgium, \$114; Austria-Hungary, \$83; Russia, \$36, and Servia, \$88.

If one were to judge of the financial power of the nations by their per capita debt, France would be in a very weak position as compared with Germany, Russia and other European nations. But it must be kept in mind that the German national debt does not include State debts, as has been already explained. Moreover, debts, whether per capita or aggregate, must be reconsidered in relation to the earning capacity and the liquid resources of the countries in question; and in these respects France is one of the strongest financial Powers in the world. This point, however, will be examined at greater length later in this article.

The money cost of the great struggle is likely to exceed any war expenditure ever incurred. Mr. Lloyd George, the British Chancellor of the Exchequer, estimated that the cost to England alone in a single year would be \$10,000,000,000. The advices received by the Department of Commerce indicate that this estimate was exaggerated. The cost to all the Powers involved up to January 1, as shown in funded debts, is only \$650,000,000 in excess of the British Chancellor's estimate for Great Britain alone. These war loans follow: Great Britain, \$1,560,000,000; France, \$1,815,000,000; Germany, \$2,600,000,000; Belgium, \$130,000,000; Austria-Hungary, \$1,815,000,000;

Russia, \$2,600,000,000; Servia, \$130,000,000; grand total, \$10,650,000,000.

The daily cost of the war is placed at \$50,000,000, distributed as follows: Great Britain, \$7,500,000; France, \$8,750,000; Germany, \$12,500,000; Austria-Hungary, \$8,750,000; Russia, \$12,500,000.

These figures—especially those for Austria-Hungary and Germany—show that they have already drawn heavily on their financial resources. Austria, in fact, cannot continue to compete with the Allies on the financial side of the struggle; and for the future must receive help from Germany. The Dual Alliance, under this tremendous financial strain, will reach the limit of its resources long before the war funds of the Allies are exhausted. Lloyd George was within the mark when he said the last billion dollars will win the war. And England has that last billion.

The United States Bureau of Commerce has prepared the following table, showing the income, expenditure and funded debt of the principal nations prior to the outbreak of war. It will be observed that the revenues of Austria-Hungary are greater than those of either the United Kingdom or of France. This merely means that Austria—a nation that cannot be compared with Great Britain or France as far as financial strength is concerned—has laid a very heavy economic burden upon its people. The figures are as follows:—

Country.	Annual Revenues.	Annual Expenditures.	Debt.
Aus.-Hungary ..	\$1,167,575,000	\$1,169,508,000	\$2,450,000,000
Belgium	146,227,000	148,677,000	825,518,000
United Kingdom.	918,805,000	917,929,000	3,305,000,000
Bulgaria	36,732,000	36,463,000	135,300,000
Denmark	30,599,000	28,497,000	95,579,000
France	914,604,000	914,550,000	6,575,000,000
Germany	879,656,000	979,676,000	1,197,000,000
Greece	25,939,000	27,725,000	206,640,000
Italy ..	512,800,000	505,841,000	1,117,418,000
Netherlands	91,823,000	101,845,000	461,649,000
Norway ..	41,559,000	41,006,000	97,215,000
Portugal ..	81,966,000	80,909,000	947,603,000
Roumania	103,507,000	103,507,000	316,693,000

Russia	1,832,505,000	1,832,505,000	4,450,000,000
Servia	24,694,000	22,717,000	130,000,000
Spain	224,904,000	220,548,000	1,814,270,000
Sweden	73,362,000	73,362,000	161,390,000
Switzerland	19,073,000	20,350,000	23,614,000
Turkey	132,242,000	152,198,000	875,654,000

Statisticians have, from time to time, attempted to form an estimate of the wealth of the different nations of the world. At most, such estimates are more or less accurate guesses of the facts. Expert statisticians of the United States Government, however, have recently made such an attempt; and the results achieved are found in the following figures:—

United States	\$150,000,000,000
Great Britain	85,000,000,000
Germany	80,000,000,000
France	50,000,000,000
Russia	40,000,000,000
Austria-Hungary	25,000,000,000
Italy	20,000,000,000
Belgium	9,000,000,000
Spain	5,400,000,000
Netherlands	5,000,000,000
Portugal	2,500,000,000

In examining these figures the reader should remember that there is a vast difference between fixed forms of wealth and wealth in a liquid form that can be made available to finance a great world-war. The United Kingdom, as will be shortly shown, is the strongest financial Power in the world, although the United States is a wealthier nation. The Republic has great natural resources in lands, forests, mines and so forth, which make up a large part of its colossal wealth. If the British Empire, as a whole, is considered there is no other political aggregation in the world that approaches it in point of fixed forms of wealth or of available financial resources.

In concluding this section of our study the reader may be reminded that Great Britain has financed herself in small part by increased taxation and to a great extent by borrowing. The income tax has been more than doubled; so that some classes of income now pay as high as 8 per cent. Before

the war Great Britain was reducing her national debt and financing all civil, naval and military expenditures out of revenue. Because of this, among other reasons, the British Government found itself in a strong financial position at the outbreak of war. Germany, on the other hand, had been increasing its national debt, being unable to cover expenditures out of revenue. Since the war that nation has increased the tax on capital, has borrowed large sums, and issued Treasury notes against personal notes and even jewelry. France has borrowed large sums, not only from the public but from the Bank of France, the Bank having greatly increased its note circulation for that purpose. As far as one can judge from the available data, the paper money of Germany is already at a discount, and the country will be very close to the end of its financial resources before the year is out.

III.

Great Britain's Commercial and Industrial Strength.

Few people realize the extent to which trade, or at least international trade, depends upon foreign investments. When we read that the United Kingdom has made a loan, say, of \$25,000,000 to China, or Japan, or the Argentine Republic, or Brazil, it does not follow that the actual gold is shipped. What actually occurs is that the country concerned has received credit in the London money market, against which it can draw bills to finance various undertakings. It is natural, of course, for the country that receives such credit to buy its supplies from the nation that furnishes the investment capital. Thus, if the Argentine Republic receives \$25,000,000 from the United Kingdom it is virtually equivalent to giving that country a new railway, or a number of grain elevators, or a harbor, or floating drydocks, or battleships or any of a hundred and one other things which its people may need, or think they need, at the time. And it follows also, quite naturally, that the nation furnishing the credit will also provide and supply the materials, machinery and general equipment necessary for the undertakings mentioned. It is in large part due to their capital investments abroad that the United Kingdom and Germany have built up their foreign trade.

Now when that is kept in mind it will be easy to understand why the commercial and industrial strength of the United Kingdom has continued to increase. The following figures illustrate the diversity and the extent of England's investments during a single year:—

British Colonies.	
Australia	\$ 61,000,000
Canada	137,000,000
South Africa	65,000,000
India	65,000,000
Other Colonies	22,000,000
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	\$350,000,000

Foreign Countries.	
The Argentine Republic	\$124,000,000
Brazil	60,000,000
Chile	20,000,000
China	15,000,000
Columbia	4,500,000
Denmark	2,500,000
Ecuador	2,000,000
Egypt	3,800,000
Finland	12,000,000
Japan	65,000,000
Mexico	65,000,000
Nicaragua	2,300,000
Norway	2,000,000
Persia	6,000,000
Russia	45,000,000
Turkey	1,000,000
The United States	63,000,000
Uruguay	3,000,000
Miscellaneous	25,400,000
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Total\$503,000,000

Grand total\$853,000,000

This table gives one some conception of the investment power of the United Kingdom, and the extent to which it has

laid the whole world under financial obligations to itself. Sir George Paish, editor of the *London Statist*, estimates that, on the average, the United Kingdom invests each year \$1,000,000,000 abroad. This money flows, in part, into the government treasuries of the various countries involved. It buys battleships, guns and war materials of all kinds; it opens up mines, it develops agriculture and industry; it constructs railways and harbors and other great national works—in a word, it flows into every channel of trade and enterprise in which there is a possibility of adding to the world's wealth and yielding a return to the English investor.

Let us now consider briefly the effect of the war on the capital investments of Europe. As has been pointed out, the United Kingdom, Germany, France, Holland, and Belgium, have been the chief investment nations of the world. For years to come Belgium will be unable to do more than look after her own needs; and the same may be said in lesser degree of both France and Germany. The United Kingdom, however, unless invaded, will have large sums of capital for foreign investment. Without doubt English investors will turn to Europe, for a time at least, in an attempt to make good the losses and the destruction caused by the war. This will be a serious matter for Canada and the United States, as well as for South America and the countries of the Far East.

While it is difficult to predict the course of interest rates after the war, it would appear that money will rule slightly higher than in the past few years. But it is scarcely possible that interest rates will rise to the figure some have imagined. It is astonishing how quickly a country wasted by war can make good its losses. It will be recalled that France by 1873 had not only paid a huge war indemnity of \$1,000,000,000 to Germany, but had also begun to prepare the way for a return of prosperity. By 1878 France was commercially and industrially stronger than she had ever been before in her history; so that Germany, astonished at this rapid recovery, prepared once more to strike her rival to the ground. And just as France recovered from the wounds of war, it may be expected that Europe in the course of a few years will also be rehabilitated. Trade and commerce will proceed along normal lines again, while at the same time there will be a great demand for capital to rebuild what has been destroyed, and to

construct new works. Between the competition at home and abroad for capital funds it is altogether likely that interest rates will slightly rise. Nevertheless, savings, and hence investment funds, will grow, as economy will be the watchword of all.

Much has been said since the outbreak of war as to the possibility of the United States capturing German, and, in part, British trade in South America and the East. This, however, appears to be a hopeless dream on the part of the American people. The foreign trade of Germany is not at the mercy of the United States; and to a much less extent is that of Great Britain. In order to capture that trade the United States must furnish the Republics of South America with capital to develop their resources; because their prosperity in the last decade has depended upon the inflow of foreign capital. But the United States, at the present time, and for years to come, will find that the home market will absorb all its available investment funds. From 1895 to 1914 the population of the United States increased from 69,000,000 to 100,000,000—an advance of over 30,000,000. This increase of population, together with the vast natural resources of the Republic, furnishes an insatiable demand for capital. This explains in large measure why the United States has placed only small investments abroad, such as have been made being confined largely to Canada, Mexico, and to a very slight extent, South America. On the other hand, the United Kingdom has poured enormous supplies of capital into North and South America, and into Asia. It was English capital, largely, that built American railways; and in building those railways a demand was furnished not only for steel and other railroad equipment from Europe, but also for the tin of Wales, the linen of Ireland, and the cotton of Lancashire, and many more British commodities. And so in South America. Brazil, for example, has been almost completely financed by England and Germany. That country bought from the United States, in 1914, \$30,000,000 worth of goods and sold the United States—chiefly coffee, rubber and hides—\$101,000,000 worth.

An examination of the trade between Brazil and the United States explains why England and Germany control the bulk of the trade of South America. The ships that carry Brazilian produce to the United States return to South America

via Liverpool and London, Hamburg and Bremen. They carry coffee and rubber to the United States, and cotton, grain, oils, etc., from the United States to England. From England they proceed to South America with cargoes of manufactured goods—machinery, railroad supplies, and so forth. The solution to this problem is found in the credit situation existing between the countries concerned. The United States settles the balance of her account with Brazil by paying bills of exchange in London, drawn to the credit of the latter country. The United States, it is true, does not actually pay in cash, but settles the balance by shipping to England manufactured goods and the products of the soil. Great Britain, in turn, ships to Brazil goods of all description, to meet the credit balance which she has arranged for that country in London. Brazil, on its part, attempts to meet its obligations as far as possible by discharging them in the form of exported goods.

Now, when it is kept in mind that Great Britain has invested in South America about \$3,500,000,000, the interest upon which each year amounts to between \$160,000,000 and \$170,000,000, it will be understood why there is such a great trade developed between the United Kingdom on the one hand and South America on the other. Great Britain furnishes the capital in the form of goods and receives payment in the form of goods. Until the United States can successfully compete with Great Britain in this process it will be impossible for the Republic to offer any serious competition. But as has been pointed out, the United States has invested only small sums in South America. The Americans own a small railroad in Ecuador, a few trolley lines in various cities, some big mines in Peru and Chile, and also a few plantations of coffee and rubber.

Another important factor that influences the general situation is the banking power of the United Kingdom. Great Britain and Germany have had, for many years, strong banking connections with South America. It is only during the last year that it has been possible for the United States to establish bank branches in foreign countries. At the present time the Americans have one bank in South America. In order to secure any considerable part of the banking business of that continent it will be necessary to grant local credit as liberally as the British and German banks have done in the past. In addition to that, American bankers will have to overcome the

prejudices of South Americans with respect to bills of exchange that are used in settling their foreign indebtedness. As we have explained, the bill of exchange drawn on London is the international currency of the world. It is drawn in pounds, shillings and pence; and if the Americans are to compete with the British through offering bills drawn on New York, it will be necessary to instruct the South Americans how to make computations in a new money medium, namely, dollars and cents. This may seem a small point, and unworthy of serious attention; but it is, nevertheless, upon such trifling circumstances that trade is built up and developed. London has not only holding power, in the financial field, but attracting power as well; and there does not seem to be any great chance of New York seriously competing with London for South American banking business for years to come—that is, until the United States is able to enter the foreign investment market, after having satisfied home demands.

Those Americans, therefore, who have been so sanguine that New York will have displaced London as the financial centre of the world at the close of the war, have not surveyed, carefully, or understood, the facts in the case. New York, it is true, in recent years, has made small loans to China and Japan; and considerable American capital has been invested in Canada. Nevertheless, the United States will have a very serious situation itself to face during the course of the war, as far as finances are concerned. During the next eighteen months the Republic must find \$750,000,000 to refund maturing obligations—mostly industrial and railroad bonds and short-time notes. Then, again, to that must be added a sum of at least \$450,000,000, for the eighteen months' period, as the United States normally receives from Europe, for investment purposes, about \$300,000,000 a year. When one recalls the very great difficulties which one of the richest cities in the United States had to meet in securing \$40,000,000 to discharge obligations to English creditors at the outbreak of the war, it will be seen how absurd are the contentions of a certain section of the American press and people that New York can, or will, displace London as the world's banking and investment centre after the war. No doubt in the years to come, when the home market has become saturated with capital, the United States, as the wealthiest single nation in the world,

will have a great role to play in the field of foreign investments. At the present time, however, the Republic will have more than it can do to look after its home requirements, without venturing to take the place of either Great Britain or Germany in financing, and thus securing, the trade of the South American Republics, and the other developing nations of the world.

IV.

Canada's Financial Position and the War.

We may now briefly review the financial situation in Canada since the outbreak of the war, and the probable trend of events for the next few years in this country. Up to the outbreak of war Canada had borrowed about \$3,000,000,000 in Europe and the United States chiefly, of which the United Kingdom furnished at least \$2,500,000,000. The balance came from the United States, France, Germany, Holland, Belgium and Switzerland. Our interest obligations as a nation ranged between \$10,000,000 and \$12,000,000 a month, or somewhere between \$120,000,000 and \$144,000,000 a year. The Hon. W. T. White estimates that our interest obligations per annum are at least \$135,000,000; while Sir Frederick Williams-Taylor, General Manager of the Bank of Montreal, puts the amount at about \$10,000,000 a month. Whatever the precise sum may be, however, the fact is clear that this country has been faced with a serious situation during the last few months.

At the same time, nevertheless, it must be admitted that this difficult problem has been admirably handled, both by the banks and by the Government. Those pessimists and critics who have arraigned the banks, the Government, and the vested interests, because of the methods that have been adopted, do not realize that the financial situation might have been very much more serious. Indeed, when we contrast Canada's position with that of Brazil and the Argentine Republic, we shall see how fortunate the country has really been. As has been said, the banks both of Brazil and the Argentine, at the outbreak of the war, closed their doors; and even when they resumed business, depositors could withdraw only a stated amount of their funds each month. Even under these conditions balances could be withdrawn only after proving that

it was essential to protect the business interests of the depositor. In addition, moratoria were declared by both these South American Republics; and specie payments were suspended. Canada, it is true, suspended specie payments; but not a bank closed its doors on account of the war; and no general moratorium was declared. This last is an important point; as in our judgment it has very materially strengthened the future credit of Canada in the money markets of the world. It may be said in passing, that the Bank of Vancouver, which has now gone into liquidation, was not forced into that position by the war, but because of other reasons. On the whole, it is rather unfortunate that several Canadian Provinces—including Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have adopted more or less modified moratoria. Undoubtedly, some help had to be extended to honest debtors, who had become embarrassed because of the war; but it is doubtful whether the adoption of moratoria was the best way to meet these difficulties. It should be kept in mind by the Provinces that they are legislating not only for the present, but for the future as well; and that every care should be taken to see that their credit shall remain unimpaired. On the whole, however, when it is recalled that almost every nation in the world, belligerent as well as neutral, has declared a moratorium in some form or other, it must be admitted that Canadian expedients have been very moderate indeed.

The Minister of Finance has announced that it will take at least \$300,000,000 to finance this country during the coming year. For the financial year ending March 31, 1915, it is estimated that our national debt will be increased by \$110,000,000. During the financial year 1915-1916, we shall be obliged to borrow over \$100,000,000 for war purposes. Thus in the two financial years, 1914-16, the national debt will likely be increased by well over \$250,000,000. The old sources of revenue will yield \$120,000,000; and new taxation is expected to provide \$30,000,000, leaving a balance of \$150,000,000 to be financed by borrowing. Where is this immense sum of money to come from? In part, no doubt, the Canadian people themselves may be trusted to furnish this capital to the Government. Savings deposits are piling up in the banks, while current loans are declining. At the present time there is an

abundant supply of working capital, at least, in Canada, as distinct from investment capital. Temporarily, some of this working capital which is now unemployed might be well invested in Government debentures that can be sold when the money markets of the world are more favorable. It is doubtful, however, whether Canada has \$100,000,000 of investment capital to put in her own Government securities; and the United Kingdom must be depended upon in large part to furnish the funds to finance this country during the course of the war.

For the next few years our municipalities and industries will be obliged to look to the home market, and to the United States, for capital. For one thing the London market is closed at the present time to all but war loans. English investors, too, have turned against our industrials, particularly during the last year, because of their disappointment in the management and the earnings of Canadian concerns. Old Country capitalists, also, have become distrustful of the financial administration, and the undertakings, of many Canadian municipalities. Aside from war conditions, therefore, we could not hope just now to successfully place large amounts of municipal securities in London. It has become necessary, as a result, for Canada to turn to the United States, particularly to New York and Chicago, to find the money to finance its industries and municipalities. Since the outbreak of war, and up to March 15, about \$65,000,000 of municipal securities have been sold in the United States. This is explained in part by the fact that there has been a surplus of working capital in the Republic during these months owing to the slowing down of industry; and in part by the fact that American insurance companies, doing business in Canada, have taken up these bonds at attractive prices. But it will be in vain to hope for any substantial flow of capital from the United States for years to come. We may, and probably shall, receive considerable sums for industrial and municipal development; but the amount of capital that will come to this country from the Republic will be relatively small, compared with what we have received from the United Kingdom in the past decade.

Fortunately, the war has made it possible for Canada to cut down its imports; and thus to close the gap between imports and exports. We may, indeed, expect that our sales and

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CONTENTS OF VOLUME XXII.

JULY, 1914.

	PAGE
OUR INTEREST IN TURKEY, R. Chambers	1
SOME NON-SHAKESPEAREAN HISTORICAL PLAYS, W. F. P. Stockley	13
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis	34
THE PUZZLE OF THE CANADA CLERGY RESERVES, J. Powell Laycock	47
RUBBER, GUTTA-PERCHA AND ALLIED SUBSTANCES, John Waddell	56
EDUCATIONAL READJUSTMENT IN THE U. S., H. T. J. Coleman	66
SONNET—MECAENAS, Alexander Louis Fraser	70
LIFE OF THE SETTLER IN WESTERN CANADA BEFORE THE WAR OF 1812, Adam Shortt	71
THE RELIGION OF ISRAEL, W. G. Jordan	90
CURRENT EVENTS, H. Michell, O. D. Skelton	93

OCTOBER, 1914.

ANDREW MARVELL'S PROSE WORKS: A HISTORICAL STUDY, W. D. Taylor	113
THE PARABLES, S. H. Gray	126
THE POPPY AND THE VINE, W. L. Goodwin	135
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis.....	152
THE GRANGE IN CANADA, H. Michell	164
WHAT THE PRESENT WAR MEANS, J. Cappon	184
FOOD AND ITS ORIGIN, W. T. MacClement	198
THE EUROPEAN WAR AND THE PEACE MOVEMENT, O. D. Skelton	205
ROMAN IMPERIALISM, W. Gordon	215
CURRENT EVENTS, W. L. Grant	219

CONTENTS OF VOLUME XXII—(Continued).

JANUARY, 1915.

	PAGE
ARCHIBALD LAMPMAN, Bernard Muddiman	233
CANADIAN OCEAN STEAMSHIPS AND THEIR EARLY DIFFICULTIES, W. Smith	244
MECHANICAL MEASUREMENT OF TIME, N. F. Dupuis.....	254
THE PLACE OF THE CANADIAN-BORN IN THE EMPIRE, Logie Macdonnell	265
ALFALFA, THE CONQUEST OF THE AIR, C. C. James.....	280
FIFTH F. C. C. ENGINEERS AT VALCARTIER, A Graduate....	294
SONNET, Alexander Louis Fraser	298
THE ORIGIN AND HISTORY OF THE HEBREW LANGUAGE, H. T. Wallace	299
CURRENT EVENTS, James Cappon	317

APRIL, 1915.

GERMAN PHILOSOPHY AND POLITICS, John Watson	329
OUR GREATEST COMMON DIVISOR, David H. Browne.....	345
NATURAL MEASUREMENT AND INTERVALS OF TIME, N. F. Dupuis	351
MODERN BRITISH FOREIGN POLICY, J. L. Morison.....	363
QUEEN'S AND THE WAR, D. M. G.....	384
GERMANY'S CONTRIBUTION TO MODERN CULTURE, E. F. Scott	389
THE FINANCIAL POWER OF THE EMPIRE, W. W. Swanson....	400
DR. SAROLEA AND THE WAR, W. G. J.	429
AN AMERICAN VERDICT, A. S. F.	433
CURRENT EVENTS, W. G. J.; K. N. Colvile.	437

imports will just about balance one another, in the immediate future, for a considerable period, owing to the effort that is being put forth to increase production in this country, and to the decline in buying power due to the cutting off of outside loans. This, however, has brought us face to face with another difficulty. As we have remarked, no country actually imports gold when it borrows, but really draws against credit balances to purchase goods from abroad. As we have now no balances against which to draw, there has been a tremendous decline in imports, and a corresponding loss of customs revenue. In this sense it may be truly said that the taxes laid by the Finance Minister are war taxes. If there had been no war it is quite true that there would have been a great falling off in revenue; but the deficit would have been made good by borrowing, which would have involved only a small increase in taxation, or perhaps no increase at all. But owing to the war, it has become necessary to raise huge sums for military purposes, thus obliging the Government to lay fresh taxation to meet deficiencies in the revenue account.

Limits of space will not permit us to give a detailed exposition of all the expedients adopted in Canada to solve the financial and industrial problems raised by the war. However, one fact seems to have been made abundantly clear during these difficult months. The United Kingdom has shown that it possesses enormous financial power, and that it is determined to look after not only its own interests, but the financial needs of its Colonies as well. From a survey of the whole situation, it is evident that Canada must move slowly in its economic expansion during the immediate future. But when peace shall have been declared it is quite safe to say that once again all the capital necessary for development work in this country will be secured from Great Britain.

Some critics have ventured to ridicule Sir Wilfrid Laurier's assertion that the Twentieth Century belongs to Canada. In the sense that this country will be able to offer opportunities to every man who is able and willing to work, and who will be a producer and not a mere speculator, Sir Wilfrid's contention is absolutely correct. There is no nation in the world that offers to the average man greater scope or opportunity for success in commerce, industry, agriculture, or finance, than does Canada; and bearing these facts in mind it behooves

Canadians, both individually and collectively, to stop talking about hard times and to get down to real business. And there is no great need to make any radical change by diverting the people from city or town to the land. What we need, and must have, is a return to normal business conditions; in which manufacturer, merchant and farmer, all together, will play their part. And finally, it may be worth while adding that there is need in this country for a greater display of a spirit of co-operation and mutual sympathy among all classes, and less for party and class recrimination and partisanship.

W. W. SWANSON.

DR. SAROLEA AND THE WAR.

WE have before us two volumes by Charles Sarolea, D.Ph., D. Litt., editor of "Everyman," and "Head of the French Department in the University of Edinburgh"; one of them is history, showing: "How Belgium saved Europe," the other published in 1912, "The Anglo-German Problem," has been described by King Albert as "a prophetic book." At the time that we write this notice the author of these two volumes, having done great service on behalf of the Belgian Fund in Britain, is visiting Canada and the United States to represent the cause of his native land, and is prepared in the fulness of his knowledge to meet any pro-German apologist. Even in the multitude of "war-books" these two stand out clearly because of the writer's special knowledge and ability.

Dr. Sarolea makes a great claim for the small nation to which he belongs as having chosen deliberately the difficult pathway of duty from the highest motives, and in the most self-sacrificing spirit, thus rendering a service to Europe the value of which cannot be estimated. Most of us had already conceded this claim before we read this eloquent and detailed proof of it. We remember our admiration for the heroic resistance of the small Belgian army in the first days of the war, and how we hoped that Britain and France would be able to send effective help in time to save Brussels and Antwerp; we had to be content with reports of glorious retreats, and now we know the terrible price that Belgium has had to pay for her faithfulness to her treaty obligations. The cry goes up to heaven, "Lord, how long," and the sad reply is, "In proportion as the Belgian resistance is more heroic, in proportion as the allies succeed in driving back the Germans, the Belgian people themselves are bound to suffer more; the worst is still before us." Dr. Sarolea was in Belgium during the early stages of the war and saw the dreadful havoc wrought by the German armies, when the Belgians attempted an impossible task, expecting every day that help would come. But he does not blame the Allies. His view is, "The preparedness of the Germans will redound to their eternal shame. The unpreparedness of the Allies will redound to their lasting honor. Germany was negotiating for peace, and all the time was treacherously mass-

ing her troops on the Belgian frontier, with the result that twenty-four hours after the declaration of war three army corps were appearing before Liege. France and England continued to negotiate for peace in all sincerity, with the result that on the declaration of war England was not able for ten days to disembark her troops, and France had to think of her own defence instead of rushing to the defence of the Belgians." Pierre Nothomb, another Belgian, describes the feelings of anxiety and uncertainty that stirred the hearts of his countrymen last August, in the following words: "Had France not formally declared that she would respect our land 'even if considerable forces should be massed on our eastern frontier'? Had the German Ambassador not stated to the representatives of the Brussels press the Government's definite decision to keep their word? 'You may see,' he said, 'your neighbor's houses afire, but you need have no fear for your own.' And did he not repeat that until the very last moment, through his attaches and secretaries?" (Everyman, Jan. 8, 1915.)

Dr. Sarolea thinks that, "If the Allies had clearly intimated that they were not going to co-operate with the Belgians, the Belgians would have exchanged their defensive for offensive tactics. Namur would have been saved, a joint Belgium and French army would have harassed the Germans, on the rear, and the advance of the enemy into France would have been checked."

Of course, the author of this book does not lay claim to neutrality, and he admits that his "nerves are still shattered and his imagination still haunted" by the horrible sights that he saw "in the course of those five tragic weeks which followed each other with such staggering rapidity," but he claims that he makes a sober statement, and that, when all allowances have been made for the exaggerations natural in such circumstances, it can be abundantly proved that the Germans ruthlessly violated all the rules of civilized warfare.

Some among ourselves have regarded Belgium as a mere incident, "a trifle" in the general conflagration, but we think that Dr. Sarolea is quite justified in the immense moral significance that he attaches to the Belgian situation. "Apart from the military, political and artistic interest of the subject, there is, therefore, in the Belgian story a human, an emotional and imaginative appeal which no other chapter

of this war is able to call forth in quite the same measure. It touches every responsive chord; it calls forth every deeper feeling of human nature. Sympathy for a small nation unjustly attacked, indignation for an odious national crime, pity for the suffering millions, admiration for a gallant people, gratitude for those who sacrificed themselves and who did not count the cost."

Dr. Sarolea believes that, when all exaggerations have been allowed for, it is proved that the Germans, in their treatment of Belgium, have broken every rule of The Hague convention. In regard to the great work of reconstruction his views are of special interest. With the assistance of British capital, Belgium industries will need to be restored. The study of the English language, instead of German, may be made compulsory in the schools. Room for many of the Belgian refugees can be found in some of the British colonies. "The indelible memory of common sufferings in a sacred cause, of a chivalrous brotherhood in arms, the conscience of common political ideas, the same indomitable love of freedom, will weld the two nations together, and the British-Belgian Alliance will become a powerful factor in the future destiny of Europe."

In the earlier volume the author takes a wide survey of the Anglo-German problem, as it appeared two years before the war. At that time he wrote the significant words: "Let Liberal publicists strain every effort to enlighten German opinion as well as English opinion. Let them proclaim that the remedy of the present situation lies not in the satisfaction of imaginary grievances, in the concession of 'territorial compensation,' at the expense of third parties, but in the establishment of popular government in the German Empire, and in the political education of the German people." He declared with clear foresight that while the danger of a German invasion of England might be small, "the greatest danger to England is not the invasion of England: it is the invasion of France and Belgium. It is, therefore, in France and Belgium that the vulnerable point lies, the Achilles heel of the British Empire" He considers all the varied factors of the complex problem. The character of the German people, and the Prussian influence, the servile condition of the German press, with the brilliant exception of the Hebrew journalist, Maximilian

Harden; the position of the Socialists, Bernhardi's "tribalism," and the riddle of the Kaiser; all these factors of the situation are carefully revised. He maintains that the Germans had no real cause of complaint, since they came late into the sphere of world-politics, and until recently deliberately rejected the idea of colonial expansion, in fact, their progress in the new field had been quite as rapid as they had any right to expect. It is not possible to give a summary of a book that is itself an admirable specimen of condensed statements on a many-sided theme. But now that the storm has really broken, and involved a large part of the world in a terrible conflict, it is interesting to note that what we can all now see clearly in the light of these tragic events was stated quite plainly at a time when we still wished to believe that "the German menace" was, if not an empty phrase, at least an overworked alarm. "In the meantime, Prussia continues to be the storm centre of Europe—the Prussian menace is more threatening than ever. And until that menace is removed, and as long as the Prussian spirit shall prevail in the councils of the German Empire, it behooves us to be vigilant, and not to forget that European liberty and European democracy are still at the mercy of military force and political tyranny."

W. G. J.

AN AMERICAN VERDICT.¹

THIS book is an exceedingly able analysis of the negotiations leading to the war. Mr. Beck wrote before the French and Austrian Governments had published their documents, but none of his conclusions are essentially modified by this new evidence. As a distinguished lawyer, the author has had much experience in marshalling facts, and it is a pleasure to follow so lucid an argument. A German paper has dismissed the book as "purely juristic." That it is not, if the critic meant that Mr. Beck was merely the arid lawyer. He never forgets that he is pleading before the high court of civilization, an uncomfortable tribunal for any German advocate. In another sense the charge does touch an essential limitation of the book. It is confined to the analysis of the document and the motives of statesmen as revealed in them.² On the evidence so submitted his evidence is overwhelmingly against the Germanic Powers.

A historical, rather than a legal, retrospect was beyond the intention of the book, which gains in clarity by its limitations. As we cannot here retrace the well-known arguments, it is tempting to add here and there points to illustrate Mr. Beck's argument. In speaking of the beggarly array of documents which buttresses Germany's case he accuses her and her ally of lack of "a decent regard for the opinion of mankind." In another sense the regard they have shown for mankind is almost indecent. I refer to the bureaus for forming public opinion by the manipulation of truth. An incident in the quarrel over the annexation of Bosnia-Herzegovina in 1909 sheds some light upon the use made of the proximate cause of this war—the assassination of the Archduke. On the day of that year when Germany presented a virtual ultimatum

¹*The Evidence in the Case*, by J. M. Beck, LL.D., late Assistant Attorney-General of the U.S. Putnam, New York.

²A book that takes the wider historical view is *War and Democracy*, issued by the Workers' Educational Association. On the whole, this is the ablest of the current works on the war.

to Russia, an Austrian historian, Dr. Friedjung, published some documents which implicated the Southern Slav leaders in a secret conspiracy with the Serbian Government. The object was clearly to mobilize public opinion for war against the Slavs, and Serbia in particular. The documents were actually supplied by the Austrian Foreign Office, and when Russia yielded to the German threat, the Government tried, too late, to withdraw the article.¹ The Southern Slav leaders brought an action for libel against Friedjung, and conclusively proved that the documents were forgeries and that the Government knew them to be so. It was later discovered that they had been fabricated in the Austrian Embassy at *Belgrade*. One of the original documents has been found; it was several feet long and bore the marks of drawing-pins at the corners; so the size was chosen in order that it might conveniently be photographed! In two years the Austrian Ambassador concerned was made permanent undersecretary in the Foreign Office. This incident sheds a curious light on the secret trial at *Serajevo* and the use made of its results. The Serbian Government may indeed have known of the contemplated assassination, but there is nothing in the Austrian record to exclude the possibility that the trial was manipulated to discredit Serbia and draw upon the moral support of the Austrian people.

The Serbian case has been half forgotten behind the greater sin against Belgium. Mr. Beck's treatment of the subject of Belgian neutrality effectively exposes one sophism advanced by interested advocates. He first shows that the successive treaties of neutrality did not cancel one another—as if two affirmatives made a negative!—and that all the Powers have treated the neutrality of Belgium as a principle of European policy up to the outbreak of the war. Then he argues that even if the neutrality of Belgium was obsolescent, the right to be respected rested on no treaty, but on her very being as a nation. The real charge against Germany is not that her word, pledged in 1839, and repledged many times, was broken, but that she used any nation simply as a means to her own ends.

¹G. Wickham Steed, *The Habsburg Monarchy*.

Mr. Beck deals faithfully with the wretched posturing of Mr. G. B. Shaw, and the more serious pleadings of Professor von Mach of Harvard. The position of the latter is pitiable in Mr. Beck's skilled hands.

"Germany's scholarly apologist, as *amicus curiae*, then suggests that in criminal procedure, when a defendant pleads guilty, the Court often refuses to accept his plea, enters a plea of not guilty for him, and assigns counsel to defend the case. He therefore suggests that the Chancellor's plea of guilty should be disregarded and the Court should assign counsel.

"One difficulty with the analogy is that courts do not ordinarily refuse to accept a plea of guilty. On the contrary, they accept it almost invariably, for why try the guilt of a man when he himself in the most formal way acknowledges it?

"The only instance in which a court does show such consideration to a prisoner is when the defendant is both poor and ignorant. Then, and only then, with a fine regard for human right, is the procedure suggested by Prof. von Mach followed.

"To this humiliating position, Professor von Mach as *amicus curiae* consigns the great nation. For myself, as one who admires Germany and believes it to be much greater and truer than its ruling caste or its over-zealous apologists, I refuse to accept the justification of such an absurd and degrading analogy."

Had Mr. Beck written later, he could have added some striking effects to the tragic-comedy of Germany's official apologies. The Belgian Grey Book exhibits the curious hypocrisy of the German Ambassador, conciliating and half-promising till the blow was ready to fall. The last few days have shed some fresh light on the German accusation that Britain had conspired with Belgium against Germany. It will be remembered that the Germans found in the archives at Brussels documents which were held to prove the existence of such a plot. After many repetitions of the legend, its documentary evidence was published. As the world knows, there was merely a conversation between military representatives of the two nations about common action in the event of German invasion. If Germany broke the treaty, England was to keep it. As we now know from King Albert, the Teutonic surprise and indignation was acted. He had at the time sent a memorandum of the conversation to the German authorities, as was proper.

Mr. Beck doubts whether posterity will say that German diplomacy or the German General Staff have blundered the worst. One feels inclined to vote for the diplomats. The abject attempts to conciliate opinion both before and since the war exhibit that old German flaw on which Nietzsche struck his finger—*Dummheit in psychologicis*. Mr. A. G. Gardiner tells a story now current in England. Germany had won, and imposed a terrible indemnity; this was paid. England was ordered to hand over her navy, and did so. Then she was told to take over the German Diplomatic Corps. She prepared to fight to the last man.

This character is the direct and natural result of Bismarck's Press Bureau. As Prince von Bülow has recently told his public, it is as well organized as the army, but works in peace as in war, abroad as well as at home. The pages of Busch reveal how skilfully Bismarck manipulated opinion by its aid. But it is hard to respect what can be so easily moulded, or in the long run to understand what is not respected. That blindness seems to have overtaken German diplomacy, never more clumsy than in this crisis of their fate. Mr. Beck's book, representative of the opinion of America, is a pleasant reminder that the judgment of democracy, whatever its faults, is not easily deceived on a great issue.

A. S. F.

CURRENT EVENTS.

THE GREAT WAR.

Y EARLY all the contributions in this number of the Quarterly bear in some way upon the terrible conflict that is now being waged in Europe; while we try to carry on "business as usual" and to keep the current of our life, as far as possible, in its normal course, this world-catastrophe is never long out of our thoughts. Each day we look eagerly for news "from the front" and await the story of new disasters on the sea. At the beginning we were interested in speculations about the probable length of the war, and even in the terms of peace that were sketched before the conflict was a month old. We have grown accustomed to the statements as to what Italy, Greece and Roumania are going to do, and we have come to the conclusion that these neutrals are not going to do anything hastily. The Germans managed in pretty good time to push Turkey over the precipice, and thus proved the truth of Bernhardi's assertion that while Italy was uncertain Turkey was a member of the Triple Alliance. The action of Turkey keeps considerable forces of the Allies engaged in various directions, but for the service thus rendered to her partners she will probably reap a reward different from that which was expected. Whatever promises the Kaiser may have made, it is not likely that he will be able to fulfil the contract when the day of reckoning comes. We do not wish to shout before we are out of the woods, but we have good hopes that his plans and plots regarding Egypt, India and South Africa are not likely to succeed. If the brave men who are battering at the forts of the Dardanelles can achieve their great task things will begin to look the other way. The forcing of these straits in the face of modern guns has been regarded by competent judges as an impossible performance, so we must not expect it to be accomplished without heavy loss. If this work can be carried through it will no doubt exercise a far-reaching commercial and military influence. This is one of the chief centres of influence after more than seven months of the mightiest war that the world has ever seen. When the conflict started we believed that Germany had failed from the diplomatic point of view, and that in the end she would be beaten in the strife. But we

have to admit that our imagination did not do, in fact, was not capable of doing full justice to Germany's immense preparation and the stern unity and determination of her people. We may solace ourselves by saying that this preparation and slavish discipline is her condemnation in the face of a pacific, optimistic world, but after all it is the hard fact that we have to face. We did expect that Russia would be nearer to Berlin than she is now, and that the Battle of the Marne would have been duplicated in some form. Our men have toiled and suffered all through this long winter, and only the other day the German Minister of the Interior boasted that there was no foreigner on German soil. Germany, we are told, could soon have peace if she could be content with repelling the enemy. "But we cannot rest satisfied with that alone; we shall not sheathe the sword until we obtain guarantees that our enemies will not attack us again." Pretty cool that, from the people who did the attacking! What those guarantees are we are not told, and, indeed, the German people have to be content with the statement that, "Discussion of these guarantees at the present moment would not further German interest." (March 15.) The budget was adopted "without discussion." If the state of being "without discussion" is the ideal of unity and strength Germany is in a healthy condition. Thus, Herr Del Brueck can say: "We are organized from top to bottom and bound together by a fixed purpose. France wants the provinces she lost in '71; Russia wants to make a province of Prussia; Britain wants to destroy German commerce and sea-power. But what our enemies have accomplished—the loss of the greater part of our colonies—is without decisive influence on the war." The last part of the statement is true enough, viz., that it is on the battlefields of Belgium, France and Poland where the dread issue has to be decided. "On the other hand, Belgium, a great industrial section of France and part of Russian Poland are in our possession. There are no enemies on German soil; all their efforts to crush Germany have been frustrated." We believe that a slight modification is needed since then, Russian soldiers having caused some trouble on the sacred soil of East Prussia, and at least a threefold vengeance has been decreed. Very conveniently nothing is said about the battered condition of Austria or of various guarantees offered to Italy. As for this nonsense about the war having begun through Britain's

jealousy of Germany's commercial greatness, we suppose that our Prussian friends have repeated this so often that they are really beginning to believe it. However, the fact remains that Germany is not yet crushed and that if a peace of any permanence is to be obtained the Allies have still a long, fierce struggle before them. This gentleman who knows so well what other people want, does not tell even his own Parliament what Germany wants. But we believe that it is beginning to dawn upon the Germans that they cannot have the kind of victory that they expected and may consider themselves fortunate if they come out of the conflict without a crushing defeat. The Socialists are beginning to speak of the political rewards at home that they expect because they have shed their blood so freely for the Fatherland; that, of course, is their affair, but so long as Bernhardi, von Bulow and other aristocrats can say of them that they are no good at politics, but fine material to make armies out of, they are not likely to be a ruling force in their own country.

General Friedrich von Bernhardi.

Speaking of Bernhardi, the famous author of "Germany and the Next War," someone said that he was dead, but, according to reliable report, he is still very much alive and has written for the New York Sun of March 14 an article on "Germany and the Present War." He charges the English with sending out "faked" despatches or, at least, communications colored to a greater or lesser extent in keeping with British policy. But those who have read the whole article declare that his review contains nothing at variance with the world's previous knowledge, while he "conspicuously passes over the furious efforts of the German army to break through the British lines at Ypres and advance to Calais and Dunkirk." (The Mail and Empire, March 15.)

The general comes forward with an explanation of "the tremendous difference" between world power and world dominion. What he set before Germany in his book was, "World-power or decline." The distinction may be quite clear to this soldier, who is something of a philosopher, but even pro-Germans have been known to admit that Prussian world-power would be dangerously near to world-dominion; and we are not altogether reassured when we read: "We have not exercised our nation in

arms and completed our armaments for such a purpose; just the same, it has been our duty to strengthen our political and military power to such an extent that we would gain the possibility to develop our industrial and cultural interests unhampered by antagonistic Powers." We suppose this means power to do what they wished in Morocco, Turkey, Asia Minor and elsewhere. We would like to know who sought to hinder the development of Germany's industrial and cultural interest. For ourselves, we are driven to prefer Liebknecht's explanation of its origin in the Prussian military absolutism to that given by General Bernhardi. " 'World power or decline?' was the serious question which came up to us during the last days of July, 1914. The German Emperor did not hesitate to draw the sword for Germany's freedom to work out her destiny and to pick up the gauntlet of strife insolently thrown before her." We remember that the general seems to have been disappointed that the emperor hesitated at the time of the Agadir incident. Poor oppressed Germany, fighting for its freedom, is, according to this patriot, the real protection of neutral nations. "No weaker neutral state need fear any violation in the case of a victory on the part of Germany, such a violation would not be in keeping with our policies." Well! how about Belgium? Belgium deserved all that she got, for has not the North German Gazette published "unimpeachable documents" to prove that England simply considered Belgium as a vassal State, which would have to serve her as a bulwark for her position on the Channel, and that Belgium submitted to this assumption. After this we are prepared for a fierce denunciation of " 'English Navalism,' which hangs suspended like the sword of Damocles above all peoples possessed of coast or colonies open to attack." There is much in this vein, with the usual conclusion that Germany is fighting, not for herself alone, "but at the same time for the liberty of the states of the Old World from the English yoke and for the free development of all peoples which have within them the strength and ability for independent action." Certainly this statement of the German case would not be complete without the assertion that Russia and France are fighting England's battle and will have to pay the main costs of the war, "while England—free from attack behind her protecting wall of waves—will take as her prerogative the chief fruits of her victory." This shows

us once more how competent the Germans are to interpret the history of Britain and to understand her place in the world. As for ourselves, the kind of "navalism" that we cannot admire is the kind that keeps its battleships carefully wrapped up and sends out "under-sea boats" to attack unarmed merchant vessels.

Count Ernst Reventlow.

Early in the New Year, the Daily Chronicle published for the benefit of English readers, and by arrangement with the New York World, the views "of Germany's most famous and ablest jingo publicist" on the the ground that "It is always interesting to learn the mentality of an opponent, however illusioned or inflamed." Before considering his statement concerning the present war, we may gain a little light on Count von Reventlow's "mentality" if we reproduce his earlier statement regarding a naval arrangement between Britain and Germany. "It lies, indeed, in the incompleteness of human nature that Christian altruism has not yet become the common possession of the nations. So must we Germans acknowledge that we still possess enough wicked egoism to defend our property to the maximum of our strength. As yet, Germany is far from having reached that point.

"It is obvious that many English should wish to see the cost of their navy reduced. But here, again, Germans are so devoid of altruism that they cannot set the desires of the English taxpayers above common life interests. I can only repeat my former proposal, that England slacken her armaments until the competition of the German naval programme in 1920, when both fleets will be about equal. Then will the millenium be at hand, and taxpayers can sacrifice a cock to Æsculapius."

If this had not been written by a German we might have regarded it as a good joke, but, as the Prussians take themselves so seriously, we can only be thankful that the British taxpayer seems to have saved us from a millenium of that kind. In the meantime the great nations are sacrificing their men and their resources and we may hear what the Count has to say about the situation.

"We Germans, however, look backward with satisfaction upon the five months of war that have passed. The German armies, both in the east and the west, stand on enemy's terri-

tory. Both gaze into the future with the utmost confidence; and the entire German people is united as never before, and its economic situation is good." According to this authority there was no desire for war in Germany; otherwise, they would have been plunged into war in 1905 or 1908, when the situation was more favourable. Further, there are no foolish doctrinaires in Germany who believe "that one can insist upon culture by forceful methods." So far so good. Then as to the course of the war the Allies thought that the Russians would be able to advance rapidly, while afterwards it would be an easy job for the British and French to throw the German forces out of France and Belgium. We do not know where this military expert gained his knowledge as to the thoughts of the Allies, but we question whether any man with intimate knowledge of the situation cherished such thoughts. He conveniently ignores the heavy work that Russia has had to do in meeting the armies of Austria and Turkey. "It is, however, a military fact that the Russian offensive is definitely at an end." The Russians do not seem to recognize this military fact so clear to the German expert. "The other question of the future is how long will Russia and France believe that Great Britain is able to break down the power of German resistance." We are sorry to say that we cannot answer this question, but so far their faith seems to be pretty robust. These are generalities, but some specific statements are worth noting. We are told that, "So great are the supplies of provisions in this country that they will last beyond the next harvest." Starvation, or the prospect of it, as an excuse for submarine warfare on commerce then does not exist. But notwithstanding the bombardment of unfortified towns, dropping bombs on open villages, the scattering of mines broadcast, the torpedoing of a hospital ship, it appears that it is Britain and not Germany that "has trod underfoot the international rights of the sea and all international custom." Further, a submarine blockade of the English coast would be in a line with international rights, while the closing of the North Sea by Great Britain runs counter to international rights. "It would be the first time in history that the coasts of Great Britain were blockaded, but Germany, by her submarine power, is in a position to carry out such a blockade of British coasts and harbours, and, in fact, as an effective blockade in the sense of the De-

claration of Paris, 1856." After such a wonderful definition of a "blockade" as this we are not surprised to be told that "The English fleet can, when it wishes, always find our fleet, because it does not hide itself," and, "In conclusion, we know that the longer the war lasts, so much the better will be our world-standing." Great faith here, not only in German success but also in the glory and profit of war; as Mr. Norman Angell would say, "Still under the Great Illusion."

The German Conduct of the War.

War is in any case a terrible business, even if combatants keep as close as possible to the rules that have been formulated for the benefit of unfortified places and non-combatants. We are prepared also to admit that in the stories of "atrocities" there is likely to be much exaggeration. Our desire should, of course, be to learn the actual sober truth and not idly to brand our enemies as "barbarians." Frank Harris, in the *New York Sun*, tells us that: "When we believe with Messrs. Bennett, Thompson, McCutcheon and Cobb that the Germans have waged war like civilized human beings, that their soldiers have been severe but not ruthless in Belgium even in dealing with franc-tireurs, and have shown the ordinary inhabitants almost invariably kindness and courtesy and have taken care not to destroy cathedrals and works of art, we are coming near the frame of mind which will allow us to see facts plainly and to weigh scrupulously the various factors which make for failure and success in this war." This authority thinks that Germany may win, and, in fact, if she had a diplomatist "like Sir Edward Grey he would finish off the war in a month by offering Russia certain advantages in the Balkans." In other words, if he had charge of German diplomacy he would throw over both Austria and Turkey. "Why should German lives be sacrificed to prevent Russia getting a good port?" More "scraps of paper" to be torn up for the safety of Germany, and this from a gentleman who "was educated in Germany" and has edited English magazines. One would like to believe at his suggestion that the behaviour of German soldiers in Belgium was "correct," with only incidental lapses from good discipline. But other American correspondents—Powell and Harding Davis—leave us with a different impression. We have paid some attention to the German war book and

gained the impression that the kind of education there given is not good for soldiers let loose in a foreign land. We have read actual extracts from letters written by German soldiers as well as the reports of the Belgian commission. It is a matter of public knowledge that Germans have bombarded undefended places without warning; dropped bombs on the open city or country, and destroyed unarmed ships. These things are all done by command of the highest authority and show that "frightfulness" is a real policy. Now after seven months the French talk about being driven to make "reprisals." What is the use at the present stage of dropping bombs on Colchester or Paris and killing civilians? It is not war; it is sheer folly. But if this is the policy of those in authority what might be expected from the soldiers on the march, in the fury of disappointment or under the influence of drink. One of the most sober and responsible documents on this sad subject is the Pastoral Letter of the brave Cardinal Mercier. In it he says: "Entire villages have all but disappeared. At Werchter-Wackerzeel, for instance, out of three hundred and eighty homes, a hundred and thirty remain; at Tremeloo two-thirds of the village is overthrown; at Bucken, out of a hundred houses, twenty are now standing; at Schiften one hundred and eighty-nine houses out of two hundred are destroyed—eleven still stand. At Louvain the third part of the buildings are down; one thousand and seventy-four dwellings have disappeared; on the town land and in the suburbs, one thousand eight hundred and twenty-three houses have been burnt.

"In this dear city of Louvain, perpetually in my thoughts, the magnificent Church of St. Peter will never recover its former splendour. The ancient College of St. Ives, the art-schools, the Consular and Commercial Schools of the University, the old markets; our rich library, with its collections, its unique and unpublished manuscripts, its archives, its gallery of great portraits of illustrious rectors, chancellors, professors, dating from the time of its foundation, which preserved for masters and students alike a noble tradition, and were an incitement in their studies—all this accumulation of intellectual, of historic, and of artistic, riches, the fruit of the labours of five centuries—all is in the dust."

One may say that all this is very sad, but it is the natural result of war. Then the question always rises, what right

had Germany to make war on Belgium? Their varied explanations since they started "to hack their way through" have satisfied no one but themselves. Wherever we can turn we find something that is "ruthless" enough. "Many a parish lost its pastor. There is now sounding in my ears the sorrowful voice of an old man, of whom I asked whether he had had Mass on Sunday in his battered church. 'It is two months,' he said, 'since we had a church.' The parish priest and the curate had been interned in a concentration camp. Thousands of Belgians have in like manner been deported to the prisons of Germany, to Munsterlagen, to Celle, to Magdeburg. At Munsterlagen alone three thousand one hundred civil prisoners were murdered. History will tell of the physical and moral torments of their long martyrdom. Hundreds of innocent men were shot. I possess no complete necrology; but I know that there were ninety-one shot at Aerschot, and that there, under pain of death, their fellow citizens were compelled to dig their graves. In the Louvain group of communes one hundred and seventy-six persons, men and women, old men and schoolboys, rich and poor, in health and sickness, were shot or burnt. In my diocese alone I know that thirteen priests or religious were put to death. One of these, the parish priest of Gelrode, suffered, I believe, a veritable martyrdom."

Dr. Sarolea commends a healthy scepticism on such matters, as newspapers are often unreliable in their news and uncritical in their judgment, disposed to circulate the most sensational stories. But he maintains that now we need no longer appeal to such reliable reports as those published by the Belgian Commission, as there is a superabundant supply of documentary evidence from *purely German sources*. One may be quoted from the notebook of a Saxon officer. "The strikingly beautiful Village of Gue-d'Hossus (Ardennes) has been burnt, although innocent as it appears to me. I have been told that a cyclist fell from his machine and that in his fall his gun went off; then they fired in his direction. They have simply thrown the male inhabitants into the flames. We must hope that such atrocities will not occur again."

It is maintained that according to The Hague Convention the population of war-occupied territory have a right to take up arms spontaneously against an invading army. But the German war book denies that there are in the strictest sense any

"laws of war"; the one thing that it does recognize as based upon a guarantee that "up till now no Power has dared violate" is the very thing that Germans did violate, namely, the security of neutral territory.

The tone of the following paragraph is not likely to help towards humaner methods of warfare. "Since the tendency of thought of the last century was dominated essentially by humanitarian considerations, which not unfrequently degenerated into sentimentality and flabby emotion, there have not been wanting attempts to influence the development of the usages of war in a way which was in fundamental contradiction with the nature of war and its object. Attempts of this kind will also not be wanting in the future, the more so as these agitations have found a kind of moral recognition in some of the provisions of the Geneva Convention and the Brussels and The Hague Conferences." Evidently the point of view is that of a war carried on in the enemies' country and with the expectation that the sacred soil of Germany will remain intact.

On the German side this question of atrocities has been fully discussed by Walter Bloem. His idea is that "the violation of neutrality cry having been discredited by the discovery of documents in Brussels, the atrocity cry has taken its place, but what the enemy would have done if he had gained a footing on German soil would have made "the Belgian atrocities like the careless pranks of beardless youths." What Germany did in Belgium was "far less an act of vengeance than a signal of warning for the country which has not yet been occupied. And about this there can be no doubt; the burning of Battice, Herve, Louvain, Dinant, were effective as warning signals." The writer concludes his lengthy apology with the statement: "The population of Belgium is now beginning to breathe again, to calm itself, to take up its work and its habits of life. The firm, unobtrusive and iron hand which leads the fortunes of the orphaned nation intervenes everywhere for good." (The Daily Chronicle, from the *Koelnische Zeitung* of Feb. 10). Another German writer assures his countrymen that if it were not that the inhabitants are suffering from "a sort of shyness" there would be little to choose between the Brussels of to-day and that of the pre-war days. But still another declares that most of the inhabitants are "still fanatics," nourishing ill-feeling against Germany.

“The orphan” and “the iron hand” are evidently not easy to harmonize.

The Internal Condition of Germany.

It is very difficult to form, from the conflicting reports, any clear idea of Germany's ability to bear the strain in regard to the matter of the food supply. Mr. F. W. Wile, the author of “Men Around the Kaiser,” praises Germany's far-sighted frugality. He thinks that the country is a very long way from being at the end of its resources, in spite of the pressure of the British Navy. But he finds quite admirable the way in which the national resources are being organized in view of a long war. The professors of Germany are taking part in this campaign also; they are giving lectures on domestic economy, and urging that in every department of the household attention should be paid to the precious scraps. Professor Ostwald, a distinguished scientist, is devoting his energies to this form of education. From another source, we hear of Professor Schleich who declares that in times of peace we are all more or less gluttons and could with advantage cut down our allowance of food. Fasting has its advantage from the point of view of health as well as from that of economy. But to be effective this course of abstinence must be universal and not simply the counsel of perfection of a few patriots. This is a question that the people are allowed to discuss and an audience of two thousand met in a circus to discuss “England's plan for starving out Germany.” It was recognized that nothing could be imported and that the country would have to rely on its own resources until next harvest, but comfort was found in the reply to be given by the German submarines. Every effort is used to conserve the resources of the country, and to prepare for an abundant harvest, but beyond that the people refuse to look. By that time the war is to be finished. A traveller reports that they close all discussions of this nature with the phrase, “Der Krieg ist in Sommer zu Ende.” “Outwardly there is no anxiety among the Germans as to their ability to feed both themselves and their guns throughout the war. Any such feeling is dissipated for the present by the comforting belief present all over the Fatherland that their submarines can starve out England long before England can do the same for them.” But they are making a house-to-house copper canvas and in other ways pre-

paring for all emergencies, and those, who will "eat cake" are reminded that they are in league with the devil.

That springs from Satan, and must not be;
 We gray-beards surge through the French countree.
 Singing and oaths we've strewn in our wake.
 Heida—how our valour glows!
 Heida! how our red blood flows!
 But you—eat cake!
 But you—eat cake!

Abstinence from cake and the indulgence of fierce hatred for England is not likely to improve the German temper and we are exceedingly sorry that they rushed themselves and the world into this sea of troubles. It is hard for us to understand by what process they come to the conclusion that by devilish diplomacy Sir Edward Grey brought them to this awkward situation. Yet that thought also inspires "poetry," as witness Herr Hockstetter's effusion:

By shell from sea, by bomb from air,
 Our greeting shall be sped,
 Making each English homstead
 A mansion for the dead.
 And even Grey will tremble,
 As falls each iron word:
 "God punish England, brother!
 Yea punish her, O Lord!"
 (From translation by G. Valentine Williams.)

The "hymn" from which this specimen verse is taken is said to have been chanted in Bruges Cathedral on the Kaiser's birthday.

A Scandinavian business man reports to the Daily Chronicle on February 20th: "One German said to me, 'We do not trouble ourselves much about Russia; we pity the French, and despise the Belgians, but our feelings toward England are Hass, Hass, Hass.' This fervent hatred is found with everybody, men and women alike, and I am told they make great efforts to spread it, even through the schools." He found that Hamburg had been badly hit and that many places were suffering from trade depression. But, on the whole, the people adapted themselves cheerfully to the hard conditions and expressed admiration of the general administration of the war. The hatred of England is a common bond of union, but "Every thought of victory has been given up, and the people who talked

most strongly about the possible outcome of the war do not appear to hope for anything more than an honourable peace." This neutral observer says that he was kindly treated and formed a favourable impression of the German soldiers that he saw.

The Attitude of the United States.

The United States as the largest and most important neutral country occupies a peculiar position at the present time, and efforts have been made from both sides to gain the sympathy and support of its people. It is quite clear that the sympathy of the great majority of the people is with the Allies. Many of the noblest defences of British action have come from American writers. The clear statements by the ex-President of Harvard University, acknowledging all just debts to Germany, but showing how impossible it is to admire methods of government and the military spirit of Germany, probably represent the best opinion of the country. Money and help of the most valuable kind has flowed from the United States to Belgium, and the condition of that country would have been in an even more terrible condition without this timely assistance. Red Cross work in other lands has also received ample support from our neighbours to the south. Those who have travelled through the land tells us of the widespread interest in this great struggle and of the desire to help those who are suffering from the ravages of war.

When we turn to "The Administration" it has received criticism from both sides, and the natural inference would be that it has been "correct" in its conduct. We, of course, can scarcely be impartial judges in a matter in which we are so deeply interested. President Wilson, with his troubles in Mexico, anxiety regarding Japan, and continual protests to Britain and Germany, has certainly had his hands full. On the whole, the people and the press has shown a laudable desire to stand by him in his difficult position. But among his own people there are many doubts whether he has acquitted himself nobly as the leader of civilization. One of his predecessors, Theodore Roosevelt, is an outspoken critic of his action and quotes somewhat scornfully a statement of President Wilson's which he thinks "is not happily phrased." "Look ahead upon the troubled world. Only America is at peace among all

the great Powers of the world. Only America is saving her power for her own people. Only America is using her great character, her great strength and her great interest for peace and prosperity.

"Do you not think it likely that the world will at some time turn to America and say: 'You were right and we were wrong. You kept your heads; we lost ours. Now in your self-possession, coolness and strength, may we not turn to you for counsel and assistance? May we not look forward to the time when we shall be called blessed among the nations and the servants of mankind?' " Britain might reply we could not save ourselves because we had a duty in trying to save others. But many replies have been made to this self-complacent declaration by Americans. Col. Roosevelt declares that when he signed conventions against the barbarisms that have been committed in this war he meant it, and he thought he was acting for the nation. President Wilson calmly commended the appeal of Belgium to the judgment of history, but we are reminded that history will judge America also. There have been many strong expressions that the first protest and all the other protests that went out from Wilson, the idealist, and Bryan, the philanthropist, were purely American and commercial in their character. Perhaps this is unfair criticism, and Britain, under similar circumstances, might not have done better; it may be that we have not reached the point where governments represent not merely the commercial interests, but also the moral life of the people. The protests of the United States Government have been so far national and commercial in the strictest sense. In this, many of its own supporters have found cause for criticism. We are glad to see the United States keep out of the actual struggle, but as the leader of civilization, "God's country," as the pious patriot says, it has not done any pioneer work in the interests of humanity. We have to concede to President Wilson that among the great civilized nations "only America is saving her power for her own people." But we question whether saving one's power in that sense is the way to gain the highest influence. "The only difference is that the protest we have made is a protest about our pocket-book, while the protest concerning the violation of the rules of war is a protest that concerns humanity and morality." (The Outlook, New York.)

W. G. J.

INDIA AND THE WAR.

It seems probable that the state of affairs in India was one of the things which Germany looked to to prevent Great Britain participating, or at least intervening by land, in the present war. Seeing that Germans of every class, from the consul-general in Calcutta to the humblest denationalized Jesuit in Bombay, are now suspected of having long been agents of Pan-Germanism, it is surprising that events have so falsified this expectation, but even the best informed Englishmen here were a little surprised at the unanimity with which every class of Indian has asserted its loyalty.

No one ever doubted the loyalty of the ruling chiefs, who have for the most part little to gain from the substitution of politic Bengalis or Mahashtra Brahmins for British officials, and to whom the principle of divine right is naturally dear. For it must be remembered that King George is the third of his line to sit on the Imperial throne, and has as good a claim to the dominion of the Moghuls as any prince in India. But the response of the Imperial vassals has been very splendid and even exceeded expectation. It should be noted, however, that large and vague offers of the resources of a kingdom are not of such real value as the more restrained, but precise, though princely, contributions in men and money of such potentates as the Nizam, the Maharajah of Mysore, the Maharajah Scindiah and others. All these have given lavishly, according to their means (and some probably beyond them), and England may remember with pleasure and gratitude that in India, at least, the age of chivalry, "the cheap defence of nations," is not yet gone.

The masses, too, are by nature and religion (and in India every man is naturally religious) loyal to the Emperor *de facto*, and in these days there is no rival *de jure* claimant. The soldiers, too, are born fighting men and can be relied on in any event against a foreign foe. The British officers, indeed, who always idolize their men, would always and in all circumstances trust them, as indeed they trusted them to their cost up to the very outbreak of the Mutiny. But in this case, in the absence of any action on the part of Turkey, there was nothing to fear from this quarter.

The merchant class, too, though they are, like the trading classes in all countries, not without their grievances and grum-

bles, know well that there is no alternative government which could assure them the same stability and credit as the British connection.

But of the nationalist politicians and agitators one could hardly have foreseen with any confidence what their behaviour would be. In the event, the Bengali press proved overwhelmingly loyal and complained chiefly that they were not allowed to organize volunteer corps. But the Bengali has never been a warrior and it is impossible not to wonder if some of them would not have been greatly disconcerted had their offers been accepted. On the west of India, too, the celebrated Poona Brahmin, Tilak, whose trial for sedition in Bombay in 1910 was the occasion of serious rioting, made, as almost his first public utterance after his return from penal servitude, an appeal to his countrymen to support the British raj. And, though bombs are still occasionally thrown at the officers of the C. I. D. in Calcutta, the attitude of all the formerly suspected element (never, I think, a proportionately numerous one) has been unexceptionable.

To what is this to be ascribed? The answer, I think, is simple. Though sedition-mongers may have welcomed German encouragement and aid against the Government, they had no desire to substitute German for British dominance. When the Bombay Commissioner of Police recently asked an oracle of the Bombay bazaar what effect the war was likely to have on Indian opinion, he replied: "We will support the English Government. We have spent 150 years in teaching you how to rule us to our liking, and we do not wish to have to begin all over again." And the Nationalist press, English and vernacular, candidly voices much the same sentiment. Secondly, it would be absurd to suppose that the zeal which the Nationalists are now displaying is wholly disinterested. When peace is once more restored they will certainly present their bill, to be paid not in lakhs of rupees, but in political independence. And, this being pretty well recognized, England is in honour bound to pay it to the best of her ability.

But just lately a fresh factor has been introduced. The Sultan, the head of the Moslem religion, has declared war on England. Here was a greater cause of alarm than any other. A *jehad* or Holy War might have brought half our neighbours across the border and occasioned serious internal trouble; but

fortunately nothing untoward of this kind has happened or seems likely to happen. Turkey's action, for one thing, came too late. The Mohamedans of India have usually been the most reliable portion of the population, and the northern fighting men, who are largely Mohamedan, had entered enthusiastically into the war. Many of them were already at the front, some already dead for the cause, all had committed themselves unreservedly to the support of England. Not at the Kaiser's bidding, even ventriloquized through the mouth of a Young Turk minister, does Islam break its oath or prove untrue to its salt.

Moreover, the Sultan has long been losing his hold on the unwavering loyalty of his co-religionists. Local leaders have a great deal of influence, and the world may before long see several *caliphs* controlling the policy of Islam in their respective quarters of the Islamic world.

As for the direct effect of the war on India, it is very slight. Many soldiers are away fighting, in Europe, in Africa, and on the Persian Gulf, but what are 200,000 or so out of 300 millions. The Emden's commerce-destruction alarmed our merchants and money is being hoarded in most primitive fashion, but prices have remained steady, and, thanks to our naval supremacy, we have no fear of any personal harm, though the bazar is, of course, full of rumours of the wildest nature—of flying ships and submarines that burrow beneath mountains and emerge in inland pools. But the South African question is settled, or at least shelved, and even the Komagata Maru occasions little excitement. The revolver shots, even, of Budge-Budge are scarcely heard amid the cannon-roar of Ypres.

But when the war is over, Canada, as well as England, will need its statesmen's best efforts to settle Indian questions satisfactorily.

K. N. COLVILE.

Mahabaleshwar, India.

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